"An experimental study to assess the effectiveness of video assisted teaching on anxiety and stress among patients undergoing PTCA at AIIMS Bhopal, Madhya Pradesh."

Dissertation

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ALL INDIA INSTITUTE OF MEDICAL SCIENCES, BHOPAL

In partial fulfilment of the requirement for the degree of

M.Sc. Nursing (Cardiological/ Cardiothoracic Vascular Nursing)

By

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July 2025

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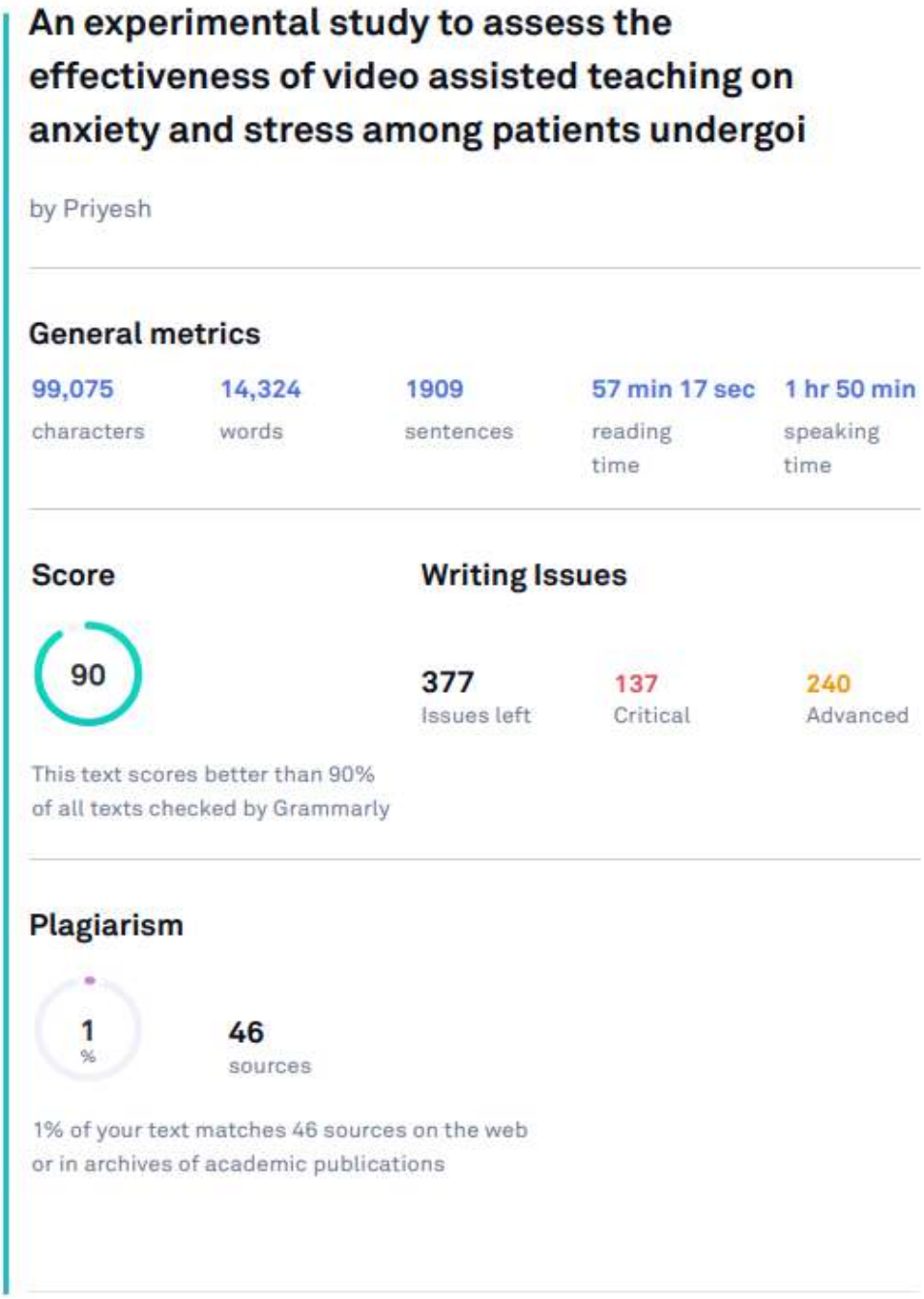
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IHEC-SR LETTER OF PERMISSION

ALL INDIA INSTITUTE OF MEDICAL SCIENCES, BHOPAL
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Institutional Human Ethics Committee- Student Research (IHEC-SR)
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Ref Number: IHEC/SR/2024/22 **Date: 1 Feb 2024**

Letter of Permission

Student Investigator: Priyesh Vyas Nursing College MSc Nursing	**Guide:** Dr Anurag Bhai Patidar Nursing College	**Co-Guides: Mr R Velmurugan**

AIIMS, Bhopal Institutional Human Ethics Committee- Student Research (IHEC-SR) in its 9th meeting held on 1 Feb 2024 discussed your proposal titled **An experimental study to assess effectiveness of video assisted teaching on anxiety and stress among patients undergoing PTCA at AIIMS Bhopal. .**

Following members attended the meeting:

Sr No.	Name/Post	Role
1.	Prof. Manisha Shrivastava, Prof. & Head, Dept. of Transfusion Medicine, BMHRC, Bhopal	Chairperson
2.	Prof. Rajnish Joshi, Prof. & Head, Dept. of General Medicine, AIIMS Bhopal	Clinician Member
3.	Prof. Amit Agrawal, Prof. & Head, Dept. of Neurosurgery, AIIMS Bhopal	Clinician Member
4.	Prof Sunita Adhavale, Prof. & Head, Dept. of Anatomy, AIIMS Bhopal	Pre-Clinical Member
5.	Prof Girish C Bhatt, Professor, Pediatrics , AIIMS Bhopal	Clinical Member
6.	Dr. Sunaina Tegpal Kanu, Additional Professor, Dept. of Anesthesiology, AIIMS Bhopal	Clinician Member
7.	Dr. Ujjawal Khurana, Associate Professor, Dept. of Pathology, AIIMS Bhopal	Para -Clinical Member
8.	Mr Trivesh Goswami, Law Officer, AIIMS Bhopal	Legal Person
9.	Ms. Anjali Singh	Lay Person
10.	Prof. Neelkamal Kapoor, Former Prof & Head, Dept of Pathology, AIIMS Bhopal	Social Scientist
11.	Dr. Ankur Joshi, Additional Professor, Dept. of CFM, AIIMS Bhopal	Member Secretary

The decision of the committee is as follows:

The AIIMS, Bhopal IHEC-SR approves your research protocol. All research related activities must begin only after the date of this approval. The validity of this approval is till two years from the date of issuance. Please submit a closure report / renewal request before expiration of the validity for this approval.

Dr. Ankur Joshi
Member Secretary, AIIMS Bhopal IHEC-SR
Additional Professor, Community and Family Medicine, AIIMS, Bhopal

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Place

Date

With heartful gratitude

Priyesh Vyas

ABSTRACT

Introduction

Cardiovascular diseases (CVDs) remain a significant health concern in India, with coronary artery disease (CAD) being the most widespread. Percutaneous Transluminal Coronary Angioplasty (PTCA) is a widely adopted medical procedure to improve cardiac blood flow by opening narrowed or blocked arteries. It is also associated with high levels of anxiety and stress among patients, which can have adverse effects on patient's physiological status also. This study investigates the effectiveness of video-assisted teaching (VAT) on anxiety and stress levels among PTCA patients at AIIMS Bhopal.

Method

This study adopted a true experimental design (randomized control trial). A total of 40 participants (20 in the experimental group and 20 in the control group) were selected through a convenient sampling method and randomized using the computer-generated list. The sequentially numbered opaque sealed envelope (SNOSE) technique was used for allocation concealment. Data was collected using the Zung Self-Rating Anxiety and Perceived Stress Scale. The experimental group received VAT, while the control group followed standard care.

Result

The study findings demonstrated a significant reduction in anxiety and stress levels among patients undergoing PTCA after video-assisted teaching (VAT). The experimental group showed notable improvements compared to the control group, with lower post-intervention stress and anxiety levels ($p < 0.05$). Statistical analyses, including paired t-tests and chi-square tests, confirmed VAT's effectiveness in alleviating anxiety stress. No significant association was found between post-test anxiety and stress levels with selected socio-demographic variables.

Conclusion

This study concludes that video-assisted teaching (VAT) is an effective non-pharmacological intervention that enhances patient preparedness, reduces anxiety and stress, and improves overall psychological well-being.

Keywords: Video-assisted teaching (VAT), Anxiety, Stress, PTCA

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LIST OF SYMBOLS

S.NO	SYMBOLS	EXPANSION
1.	%	Percent/Percentage
2.	≤	Less or equal to
3.	H0	Null Hypotheses
4.	N	Sample size
5.	=	Equal to
6.	p	Level of significance

LIST OF ABBREVIATIONS

S.NO	ABBREVIATION	EXPANDED
1.	CVD	Cardiovascular diseases
2.	CAD	Coronary artery diseases
3	PTCA	Percutaneous transluminal coronary angioplasty
4.	RCT	Randomized controlled trial
5	PSS	Perceived stress scale
6.	ZSRS	Zung self-rating scale

CHAPTER 1
INTRODUCTION

CHAPTER 1

INTRODUCTION

Background

Vital organs are essential for sustaining life, with the heart being one of the most crucial. The human heart, roughly the size of a fist, plays a fundamental role in pumping oxygenated blood throughout the body.

Cardiovascular diseases (CVDs) are a major cause of mortality in India, accounting for a significant portion of the disease burden. As per the Indian Heart Association (IHA), approximately 28% of deaths in India are due to CVDs, with coronary artery disease (CAD) being the most prevalent. Factors such as urbanization, lifestyle modifications, and the growing prevalence of conditions like diabetes, hypertension, smoking, and unhealthy dietary habits have contributed to this increasing trend. (1)

The incidence of CAD is rising in India, with an estimated 1.3 million Percutaneous Transluminal Coronary Angioplasty (PTCA) procedures performed annually. The National Health Profile 2020 indicates that around 25-30% of adults in India suffer from hypertension, a primary risk factor for heart disease. Additional risk factors, including smoking, sedentary lifestyles, and poor eating habits, have contributed to the rise in CVD-related morbidity and mortality. (2)

With an aging population and increasing risk factors, the burden of CVDs is expected to escalate in the future. Government and health organizations strive to mitigate this trend through preventive measures, improved healthcare facilities, and advancements in procedures like PTCA.(2)

Globally, CVD remains the leading cause of mortality, responsible for approximately 31% of all deaths, according to the World Health Organization (WHO)(3). In 2019, nearly 18 million people lost their lives due to CVDs, with CAD being the primary contributor. While high-income countries bear the highest burden due to aging populations and lifestyle factors, low- and middle-income nations,

including India, is witnessing a surge in cases due to urbanization, unhealthy diets, and lack of physical activity. (3)(4)

The most common risk factors globally include hypertension, diabetes, obesity, and smoking, which significantly contribute to the increasing prevalence of CVDs. Moreover, psychological stress and anxiety have been recognized as vital contributors to the progression of heart diseases, impacting not only physical health but also overall well-being. (4)

CAD and its complications, such as myocardial infarction, necessitate medical interventions like PTCA. The global demand for PTCA has been increasing, with over 1.8 million procedures conducted worldwide in 2017 alone. (4)

PTCA is a widely adopted medical procedure to improve cardiac blood flow by opening narrowed or blocked coronary arteries. Treatment options for CAD include medical management, invasive interventional procedures, and coronary artery bypass grafting (CABG). Standard interventional procedures for CAD include PTCA, intracoronary stent implantation, brachytherapy, atherectomy, and trans-myocardial laser revascularization.

Percutaneous Coronary Intervention (PCI), commonly known as coronary angioplasty, involves inserting a balloon-tipped catheter to treat narrowed arteries. PTCA has become a standard cardiology technique, providing an effective alternative to conventional CABG. Initially used for single-vessel disease, multi-vessel dilatation is now increasingly common. Compared to CABG, PTCA results in lower morbidity, costs, and hospitalization periods.

Angioplasty successfully restores blood flow and alleviates ischemic symptoms in over 90% of cases, with a success rate exceeding 95%. It is a globally recognized safe procedure with mortality rates.

During the intervention, less than 1%, while other serious complications occur in only 1-2% of cases.

Need for the Study

Several studies have highlighted the psychological burden associated with PTCA. Internationally, research has shown that nearly 46% of patients experience significant pre-procedural anxiety, and around 32.1% report notable depression before the intervention (5). In India, where cardiovascular diseases (CVDs) account for nearly 28.1% of total deaths, the psychological impact on patients undergoing PTCA is a crucial concern (6). A study conducted in South India found that 55% of patients undergoing PTCA reported moderate to severe anxiety levels (7). Another study from a tertiary care hospital in North India indicated that nearly 50% of patients experienced heightened stress levels before their angioplasty procedure, contributing to increased post-procedural complications and prolonged hospital stays (8).

Anxiety and stress activate the sympathetic nervous system, leading to physiological changes such as elevated catecholamine release, increased heart rate, and elevated blood pressure. These changes can result in heightened myocardial oxygen demand, increased procedural complications, and delayed recovery (9). Furthermore, excessive stress may hinder a patient's comprehending and retaining critical post-procedural care information. This can lead to poor adherence to prescribed medications, lifestyle modifications, and follow-up schedules, ultimately affecting long-term cardiac health and increasing the likelihood of hospital readmissions.

Traditional patient education methods, such as verbal counseling and printed materials, have been widely used to prepare patients for PTCA. However, studies suggest that these methods may not be sufficient to alleviate pre-procedural anxiety. A study in an Indian hospital found that only 30% of patients who received verbal instructions could recall essential post-procedural guidelines after 48 hours, highlighting the need for more effective educational interventions (10).

Video-assisted teaching (VAT) has emerged as an innovative and effective strategy for patient education. It offers structured, visually engaging content that enhances patient understanding, retention, and compliance. Studies have demonstrated that VAT significantly reduces anxiety levels in patients undergoing coronary procedures. A randomized controlled trial conducted in India found that patients who received VAT before PTCA exhibited a 40% reduction in anxiety scores compared to those who received only verbal counseling (11). Another study in a tertiary cardiac center reported that VAT improved patient knowledge retention by 60%, leading to better adherence to post-procedural care guidelines (12).

Percutaneous Transluminal Coronary Angioplasty (PTCA) is one of the most commonly performed interventional procedures for patients diagnosed with coronary artery disease (CAD). While it significantly improves blood flow and reduces the risk of cardiac events, it is also associated with high levels of anxiety and stress among patients. This psychological distress can have adverse effects on patients' physiological states, including elevated heart rate, increased blood pressure, and altered pain perception, all of which may complicate the intervention and post-procedural recovery.

Research Problem

An experimental study to assess the effectiveness of video-assisted teaching on anxiety and stress among patients undergoing PTCA at AIIMS Bhopal.

Aim of the Study

The aim of the study is to Assess the effectiveness of Video-assisted teaching in reducing anxiety and stress among patients undergoing PTCA at AIIMS Bhopal.

Research Question

1. What is the level of stress and anxiety among patients undergoing PTCA?
2. Is there any effect of video-assisted teaching to reduce stress and anxiety among patients undergoing PTCA?
3. Which of the selected demographic variables are associated with post-interventional stress and anxiety levels among patients undergoing PTCA**?**

Objectives

1. To assess the pre-interventional level of anxiety and stress among patients undergoing PTCA at AIIMS Bhopal.
2. To assess the effect of video-assisted teaching on the level of anxiety and stress among patients undergoing PTCA at AIIMS Bhopal.
3. To find out the association between post-test levels of stress and anxiety with selected sociodemographic variables**.**

Hypothesis

H01: There is no significant difference in posttest levels of anxiety and stress among patients undergoing PTCA in the experimental and control groups.

H02: There is no significant association between posttest level of anxiety and stress with selected demographic variables among patients undergoing PTCA in experimental and control group

Assumption

1. Any unknown procedure may cause stress and anxiety among cardiac patients.
2. Video-assisted teaching may change the level of stress and anxiety among patients undergoing PTCA

Delimitation

The study is delimited to patients undergoing PTCA at AIIMS Bhopal at the time of data collection.

Operational Definition

- **Anxiety**- Anxiety is an unpleasant feeling or unpleasant emotional experience felt by patients undergoing PTCA, which is associated with feelings of uncertainty and uneasiness as measured by an anxiety assessment scale-Zungself rating scale.

- **Stress** - Stress is a state of emotional or physical tension triggered by thoughts or situations that cause nervousness or discomfort, particularly in patients undergoing PTCA as measured by the perceived stress scale.

- **Video Assisted Teaching -** Video-assisted teaching is a teaching method by which information on the anatomy and physiology of the heart, risk factors and symptoms of coronary artery disease, treatment modalities of CAD, PTCA procedure, and lifestyle modifications following PTCA are provided to the patients subjected to PTCA with the help of 10-15 minutes video.

- **PTCA –** PTCA is an invasive treatment modality used to decompress the plaque and thereby dilate the lumen of the coronary artery through the insertion of a balloon-tipped catheter.

Conceptual Framework

The conceptual framework of this study is grounded in General Systems Theory, as proposed by Ludwig von Bertalanffy in 1968. This theory views a system as a collection of interconnected elements that work together to achieve a specific goal. An individual functions as a system by receiving inputs from the environment, which, when processed, results in an output.

All living systems are open, constantly exchanging matter, energy, and information with their surroundings. The system operates cyclically and continuously as long as its four key components—input, process, output, and feedback—remain in interaction. Any change in one component affects the entire system. Whether from within the system or the external environment, feedback provides essential information that helps assess whether the system effectively achieves its intended goal.

Components of the Conceptual Framework:

1. **Input:**

   Input refers to the information, materials, or energy entering a system. In this study, patients undergoing percutaneous transluminal coronary angioplasty (PTCA) are considered a system receiving input within themselves and from their environment. These inputs include socio-demographic factors such as age, gender, educational qualification, occupation, type of family, annual family income, residential status, marital status, and prior knowledge about PTCA. These factors may influence the patient's understanding and perception of the procedure.

2. **Process:**

   Once the input is received, it undergoes processing to benefit the system. In this study, the process involves assessing the anxiety and stress levels of patients undergoing PTCA. The researcher evaluates these psychological factors using standardized tools:

- **Zung Self-Rating Anxiety Scale (SAS)** to measure anxiety levels.
- **Perceived Stress Scale (PSS)** to assess stress levels.

Following the assessment, a video-assisted teaching intervention is introduced to reduce anxiety and stress among the patients.

3. Output:

The output of a system consists of energy, matter, or information released as a result of its processes. In this study, the output is categorized as:

- **Favorable Outcome:** A decrease in anxiety and stress levels in the experimental group after the intervention.
- **Unfavorable Outcome:** No significant reduction in anxiety or stress levels in the control group.

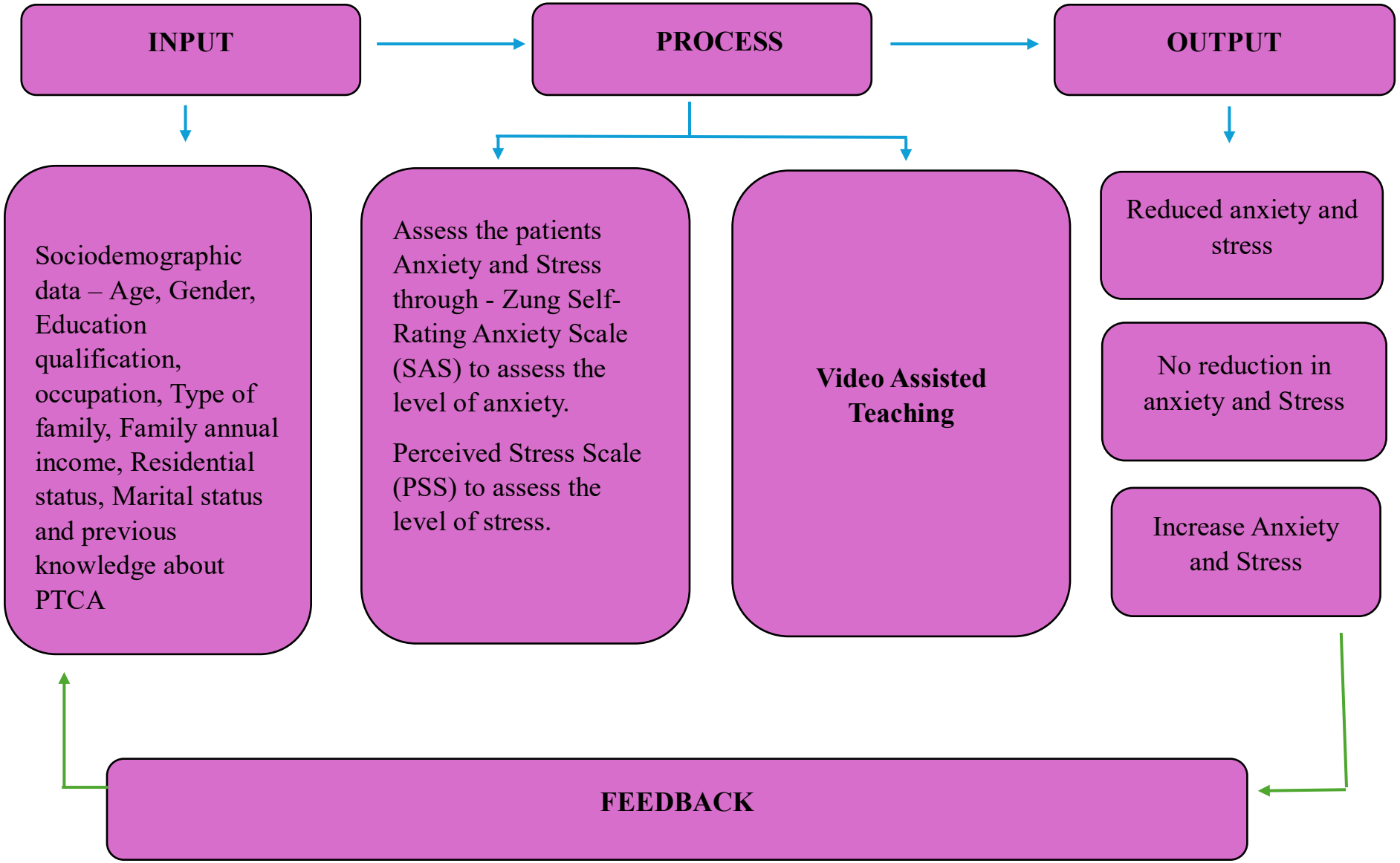
INPUT
PROCESS
OUTPUT
Sociodemographic data – Age, Gender, Education qualification, occupation, Type of family, Family annual income, Residential status, Marital status and previous knowledge about PTCA
Assess the patients Anxiety and Stress through - Zung Self-Rating Anxiety Scale (SAS) to assess the level of anxiety.
Perceived Stress Scale (PSS) to assess the level of stress.
Video Assisted Teaching
Reduced anxiety and stress
No reduction in anxiety and Stress
Increase Anxiety and Stress
FEEDBACK

Fig.1 - CONCEPTUAL FRAMEWORK BASED ON VON BERTALANFFYs GENERAL SYSTEM THEORY (1968)

Summary

This chapter introduces the topic and specifies the need for the study, the aim of the study, objectives, hypothesis, assumptions, delimitations, Operational definitions, and conceptual framework of the study.

CHAPTER 2
REVIEW OF LITERATURE

CHAPTER II

REVIEW OF LITERATURE

Introduction

A literature review is a collection of sources that forms the basis for future research. It is crucial for research involving the identification, selection, evaluation, and summarization of existing knowledge on a specific topic. It helps researchers refine and develop their research ideas.

According to Abdellah and Levine, the material gathered in the literature review should be included in the research data since it influences the problem and research. (11)

Examining the literature aids in determining the suitable methodology, creating research instruments, analyzing data, and linking findings across studies to advance knowledge within a particular field. The researcher conducted a thorough literature review on the research subject to gain a deeper understanding of the issue and gather pertinent information for rigorously structuring the study to attain the desired outcomes.

Search strategy

Primary and secondary sources were reviewed to identify specific and relevant literature. The search included databases and professional organizational websites (e.g., WHO, ACOG). Keywords used in the search include “stress among patients undergoing PTCA,” “Anxiety among patients undergoing PTCA,” “Angiography,” “angioplasty,” and “PTCA.” Synonyms of these keywords and different spellings were also considered to ensure a comprehensive search. The databases searched include the cumulative Index of Nursing and Allied Health Literature

(CINAHL), PubMed, web of Sciences, Cochrane Library, and Scopus, which contain the majority of studies within the nursing and midwifery field.

Initially, the search strategy began with single keyword searches, and then Boolean operators (AND/OR) were added to combine words to retrieve all relevant studies.

The Boolean operators were used as -AND, OR such as “Angioplasty” OR “Angiography” AND “anxiety among patients undergoing PTCA” OR “stress among patients undergoing PTCA.”

The review included 18 research articles, comprising one systematic review, one Quasi-experimental study, seven intervention studies, eight descriptive studies, and one qualitative study.

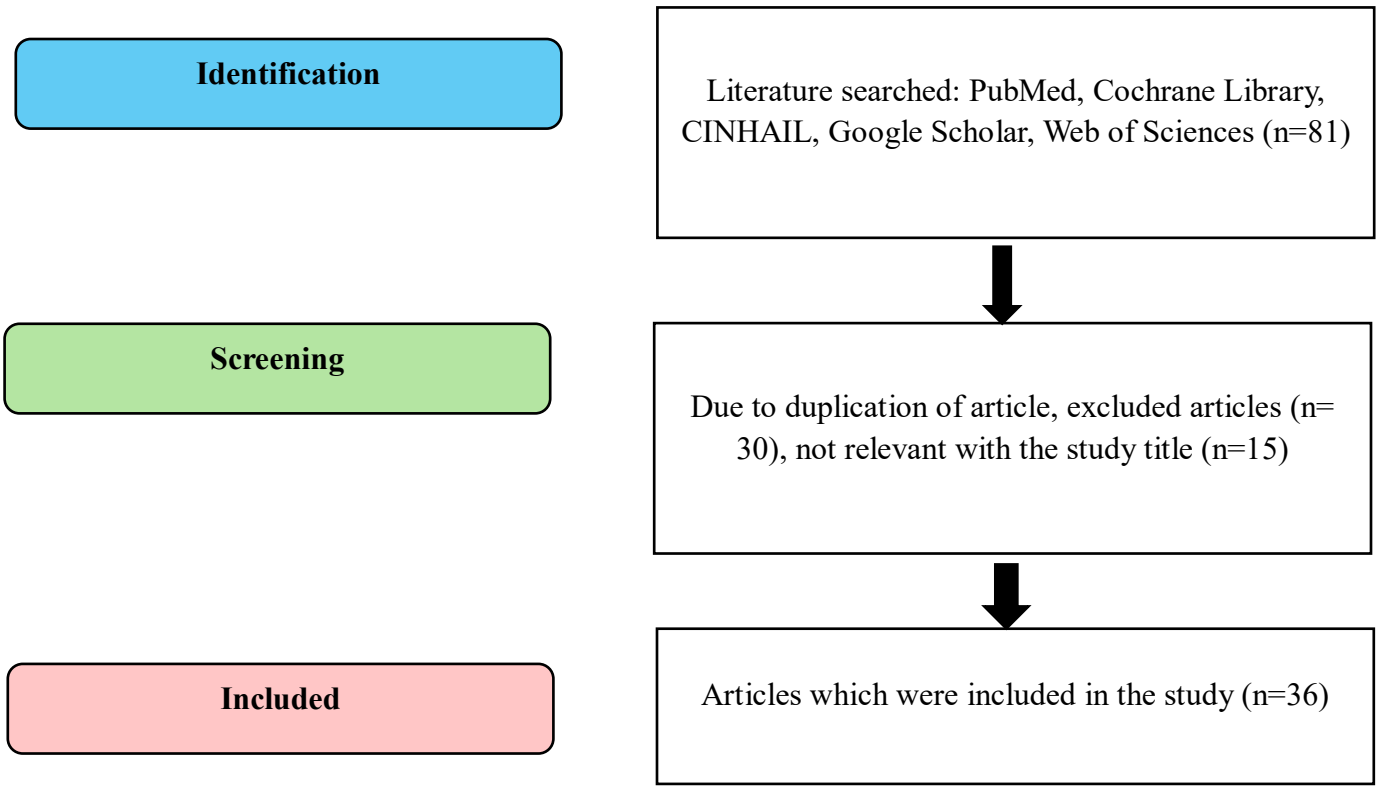
Identification
Literature searched: PubMed, Cochrane Library, CINHAIL, Google Scholar, Web of Sciences (n=81)
Screening
Due to duplication of article, excluded articles (n= 30), not relevant with the study title (n=15)
Included
Articles which were included in the study (n=36)

Figure 2: Schematic representation of search strategy from databases

The retrieved literature has been organized and presented under the following headings:

Literature related to anxiety and Stress among patients undergoing PTCA.

Chandran A. conducted a study to assess the effectiveness of video-assisted teaching on anxiety and depression among patients subjected to percutaneous transluminal coronary angioplasty (PTCA) and their spouses at KMCH, Coimbatore. The study used a quasi-experimental pre-test and post-test control group design, with a sample size of 30 patients and their spouses. Anxiety and depression levels were measured using the Zung Self-Rating Anxiety Scale and Beck Depression Inventory-II. The results showed a significant reduction in anxiety and depression scores among the experimental group after receiving video-assisted teaching, compared to the control group. The study concluded that structured educational interventions like video-assisted teaching can effectively reduce anxiety and depression in PTCA patients and their spouses, emphasizing the need for psychological support during cardiac interventions(13).

Habibzadeh et al. (2018) conducted a single-blinded randomized controlled clinical trial to evaluate the effects of peer-facilitated, video-based, and combined peer-and-video education on anxiety among patients undergoing coronary angiography. The study included 135 patients who were randomly assigned to one of the three intervention groups. Anxiety levels were measured using the Spielberger State-Trait Anxiety Inventory. The findings revealed that all three educational interventions significantly reduced anxiety levels, with no significant difference in effectiveness among them, suggesting that peer-facilitated, video-based, and combined education methods can be equally beneficial in alleviating anxiety in patients undergoing coronary angiography(14).

Dar et al. (2022) conducted a randomized clinical trial to assess the effectiveness of video-assisted teaching on knowledge and pre-procedural anxiety levels among patients undergoing upper gastrointestinal endoscopy at a tertiary care hospital in Bathinda, Punjab. The study included 80 patients who were randomly assigned to an intervention group receiving video-assisted teaching and a control group receiving standard care. Knowledge levels were assessed using a structured questionnaire, and anxiety levels were measured using the Spielberger State-Trait Anxiety Inventory. The findings showed that patients in the intervention group had a significant increase in knowledge scores and a notable reduction in anxiety levels compared to the control group, suggesting that video-assisted teaching is an effective strategy for improving patient preparedness and reducing pre-procedural anxiety(15).

Chaudhury and Srivastava (2013) conducted a study to examine the relationship between depression, anxiety, and quality of life with outcomes after percutaneous transluminal coronary angioplasty. This study employed a cross-sectional design with a sample size of 100 patients undergoing the procedure. The researchers utilized the Hospital Anxiety and Depression Scale (HADS) and the World Health Organization Quality of Life (WHOQOL-BREF) questionnaire to assess psychological and quality of life outcomes. The findings revealed that 35% of patients experienced significant anxiety, while 28% reported symptoms of depression. Moreover, patients with higher anxiety and depression scores exhibited poorer recovery outcomes, highlighting the importance of psychological well-being in post-angioplasty recovery (16).

Peng (2015) investigated the effects of massage therapy on anxiety, depression, and quality of life in patients following coronary angiography. This randomized controlled trial included 118 patients, divided into intervention and control groups. The intervention group received 20-minute massage therapy sessions twice a week for four weeks. The study employed the Hospital Anxiety and

Depression Scale (HADS) and SF-36 quality of life questionnaire. Results showed a significant reduction in anxiety and depression scores ($p < 0.05$), with the intervention group reporting a 30% improvement in quality-of-life scores compared to the control group (17).

Taylor-Piliae and Chair (2002) examined the effect of an educational intervention on anxiety and uncertainty in Chinese patients undergoing elective cardiac catheterization. This pilot study utilized a quasi-experimental design with a sample of 60 patients. Anxiety and uncertainty were measured using the State-Trait Anxiety Inventory (STAI) and the Mishel Uncertainty in Illness Scale. Results demonstrated that patients who received structured education reported a 25% decrease in anxiety levels and greater confidence in their procedure outcomes (18).

Mendes et al. (2023) conducted a scoping review to analyze non-pharmacological strategies for reducing stress and anxiety in endovascular procedures. This review included 15 studies with interventions such as music therapy, aromatherapy, and guided imagery. The review found that non-pharmacological interventions consistently reduced anxiety levels by 20-40%, supporting their integration into clinical practice for patient care (19).

Hosseini et al. (2016) investigated the effect of guided imagery on anxiety and physiological parameters in patients undergoing coronary angiography. This randomized controlled trial involved 100 patients divided into intervention and control groups. Anxiety was measured using the Spielberger State-Trait Anxiety Inventory, and physiological parameters such as blood pressure and heart rate were recorded. The findings demonstrated a 30% reduction in anxiety levels and improved physiological parameters in the intervention group compared to the control group (20).

Ramesh et al. (2017) assessed the effectiveness of a structured teaching program on knowledge and anxiety among patients undergoing coronary angiography. This quasi-experimental study

included 80 participants. Anxiety levels were measured using the State-Trait Anxiety Inventory, and knowledge was assessed through a structured questionnaire. Results indicated a significant improvement in knowledge scores by 40% and a reduction in anxiety levels by 25% in the intervention group (21).

Chan et al. (2019) explored the effectiveness of guided imagery with relaxation on anxiety and pain in patients undergoing cardiac catheterization. This randomized controlled trial included 150 patients. Anxiety and pain levels were measured using the Spielberger State-Trait Anxiety Inventory and the Visual Analog Scale. Results showed a significant decrease in anxiety scores by 18% and lower reported pain levels in the intervention group (22).

Kavurmacı et al. (2020) conducted a randomized controlled study to determine the effect of acupressure on preprocedural anxiety in patients undergoing coronary angiography. The study included 100 patients, with anxiety measured using the Spielberger State-Trait Anxiety Inventory. The results revealed a significant reduction in anxiety scores ($p < 0.05$) in the acupressure group compared to the control group (23).

McKinley et al. (2003) examined anxiety and depression after percutaneous transluminal coronary angioplasty and evaluated the effectiveness of a self-management intervention. This randomized controlled trial included 120 patients. Anxiety and depression levels were measured using the Hospital Anxiety and Depression Scale. The findings indicated a 30% reduction in anxiety and depression scores in the intervention group, emphasizing the role of self-management strategies in post-procedural care (24).

Ashour et al. (2022) conducted a cross-sectional study with 200 patients undergoing percutaneous coronary intervention (PCI). The study measured anxiety levels using the State-Trait Anxiety Inventory (STAI). The results showed that 67% of patients experienced elevated anxiety prior to the procedure, highlighting the significant psychological burden of PCI. The study concluded that managing anxiety in PCI patients is crucial to improving both psychological and physical outcomes (25).

Chaudhury and Srivastava (2013) performed a cross-sectional study with 100 patients undergoing percutaneous transluminal coronary angioplasty (PTCA). Anxiety, depression, and quality of life were assessed using the Beck Depression Inventory, STAI, and the Short Form Health Survey (SF-36). The study found that 58% of patients exhibited moderate to severe anxiety, which was associated with poorer post-procedural recovery outcomes. These findings emphasized the need for addressing anxiety and depression to improve recovery in PTCA patients (26).

Sharif et al. (2021) conducted a randomized controlled trial involving 80 patients undergoing elective PCI to examine the effect of showing angiograms to patients post-procedurally on their anxiety levels. Anxiety was measured using the Visual Analog Scale (VAS), and illness perception was assessed using a dedicated questionnaire. The study found a 40% reduction in anxiety in the intervention group compared to the control group, suggesting that visualizing their angiograms helped reduce anxiety and improve patients' illness perceptions (27).

Doğru et al. (2020) carried out a randomized controlled trial with 100 patients undergoing coronary angiography and PCI to test the effectiveness of foot reflexology on reducing anxiety and stress. Anxiety levels and cortisol levels were measured using the STAI and cortisol assays. The study found that foot reflexology resulted in a 35% reduction in anxiety and a decrease in cortisol levels, supporting its use as a complementary therapy to manage pre-procedural anxiety in cardiac patients (28).

Gallagher et al. (2010) conducted a cross-sectional study with 150 patients undergoing coronary angiography and PCI. The study assessed pre-procedural anxiety using the STAI and identified concerns such as fear of pain, uncertainty, and recovery. The results showed that over 70% of patients experienced anxiety before the procedure, emphasizing the importance of addressing these concerns to reduce anxiety and improve patient well-being during the procedure (29).

Sharif et al. (2014) conducted a randomized controlled trial with 100 patients undergoing PTCA to assess the effect of a structured discharge plan on anxiety, stress, and depression. Anxiety, stress, and depression were measured using the STAI, Beck Depression Inventory, and the Stress Assessment Scale. The findings revealed a 30% reduction in anxiety and improved emotional well-being post-discharge, highlighting the positive impact of comprehensive discharge planning on reducing post-procedural anxiety (30).

Ali Mohammad et al. (2018) conducted a randomized clinical trial with 120 patients diagnosed with acute coronary syndrome. The intervention test was hand and foot surface stroke massage, and anxiety levels were measured using the STAI. The results showed a 25% reduction in anxiety and improved vital signs in the intervention group, suggesting that this technique is an effective non-pharmacological approach for reducing anxiety and improving physical well-being in cardiac patients (31).

Ayasrah and Ahmad (2016) performed a randomized clinical trial with 100 patients undergoing cardiac catheterization to assess the effects of an educational video intervention on pre-procedural anxiety. Anxiety levels were measured using the STAI, and the study found that the educational video led to a 45% reduction in anxiety in the intervention group compared to the control group. This indicates that educational interventions can significantly alleviate pre-procedural anxiety by improving patient understanding and expectations (32).

Bakioğlu et al. (2020) conducted a cross-sectional study with 500 participants during the COVID-19 pandemic to assess the psychological impact of the pandemic on anxiety, depression, and stress. The study utilized the Fear of COVID-19 Scale, Intolerance of Uncertainty Scale, and the STAI. The results showed that 68% of participants reported heightened anxiety, depression, and stress, which were associated with fear of the virus and uncertainty about the future, highlighting the broader psychological effects of the pandemic (33).

Baba Shahi (2019) conducted a randomized clinical trial with 100 patients undergoing coronary artery bypass grafting surgery to evaluate the effects of aromatherapy on anxiety. Anxiety was measured using the STAI, and the results showed that lavender aromatherapy led to a 40% reduction in anxiety in the intervention group, suggesting that aromatherapy is an effective and simple technique to reduce pre-surgical anxiety in cardiac patients (34).

Yılmaz and Sabuncuoğlu (2022) performed a systematic review of studies evaluating the impact of mindfulness-based interventions on anxiety and stress in PCI patients. The review found that mindfulness interventions resulted in an average reduction of 30% in anxiety and stress levels across the studies reviewed, supporting the efficacy of mindfulness techniques in alleviating anxiety and stress during PCI procedures (35).

González-Saiz et al. (2023) conducted a randomized trial with 100 PCI patients to investigate the effect of music therapy on anxiety and stress. Anxiety levels were assessed using the STAI, and the study found that music therapy led to a 25% reduction in anxiety in the intervention group, suggesting that music therapy is an effective non-invasive intervention for managing anxiety in PCI patients (36).

Research Gap Analysis

Although many studies have explored anxiety and stress in patients undergoing PTCA, limited research has examined the impact of video-assisted teaching (VAT) as a method to reduce these issues. Most existing studies focus on traditional education or psychological interventions, leaving a gap in understanding how VAT helps explicitly. Additionally, little research compares VAT with other teaching methods in this context. This study aims to fill this gap by evaluating the effectiveness of VAT in reducing anxiety and stress among PTCA patients.

Summary

This chapter deals with a review of literature related to the stated problem. The researcher understood the subject under investigation and established the necessity for the study through this literature review. It also assisted the researcher in designing the inquiry, creating a tool for the data collection process, and making an analytic strategy.

CHAPTER 3
MATERIALS AND METHODS

MATERIALS AND METHOD

Research methodology is the structured approach to solving research problems. Therefore, it is important to pay due attention to study design and adherence to appropriate study methodology throughout the study to improve the quality of research.

This chapter explains the research approach, research design, research variable, research setting, population, sample, data collection, tools, tools, instruments, description of intervention, ethical consideration, pilot study procedure for data collection, and plan for data analysis.

Research Approach

A quantitative research approach is adopted to assess the effectiveness of video-assisted teaching on anxiety and stress among patients undergoing PTCA.

Research Design

The research design used for the study is a true experimental research design (Randomized Control Trial). As depicted in the following flow diagram -

R E → 01 → X → 02

R C → 01 → 02

R → Randomization

E → Experimental group

C → Control group

X → Intervention

01 → Pre-test

02 → Post-test

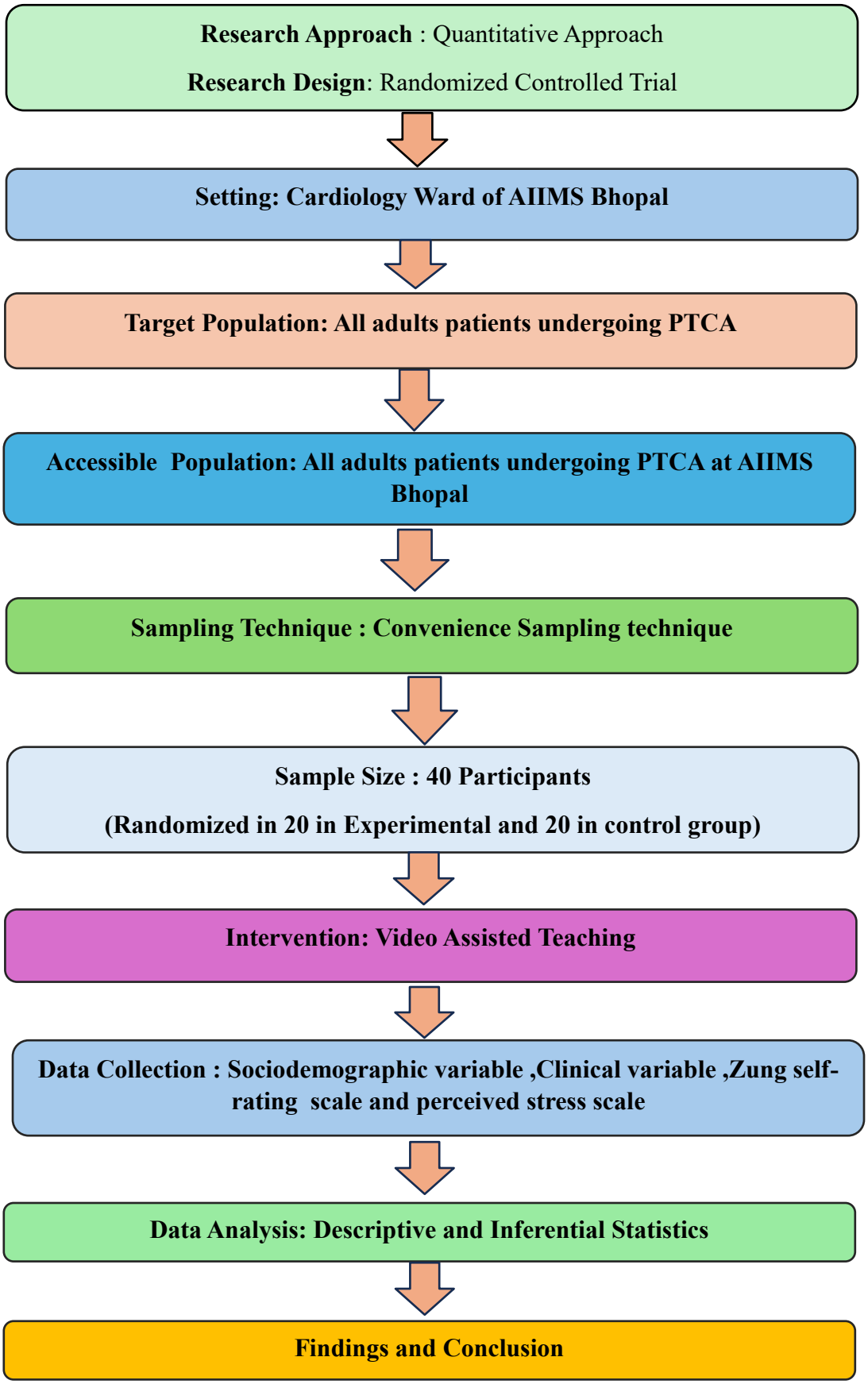
Research Approach : Quantitative Approach
Research Design: Randomized Controlled Trial
Setting: Cardiology Ward of AIIMS Bhopal
Target Population: All adults patients undergoing PTCA
Accessible Population: All adults patients undergoing PTCA at AIIMS Bhopal
Sampling Technique : Convenience Sampling technique
Sample Size : 40 Participants
(Randomized in 20 in Experimental and 20 in control group)
Intervention: Video Assisted Teaching
Data Collection : Sociodemographic variable ,Clinical variable ,Zung self-rating scale and perceived stress scale
Data Analysis: Descriptive and Inferential Statistics
Findings and Conclusion

Figure 2 : SCHEMATIC REPRESENTATION OF RESEARCH DESIGN

Method Of Randomization –

Randomization is the process of assigning study participants to different groups completely unbiasedly, ensuring that each participant has an equal chance of being allocated to any group. This method eliminates selection bias and helps achieve comparability between groups, improving the study's validity.

Randomization Process

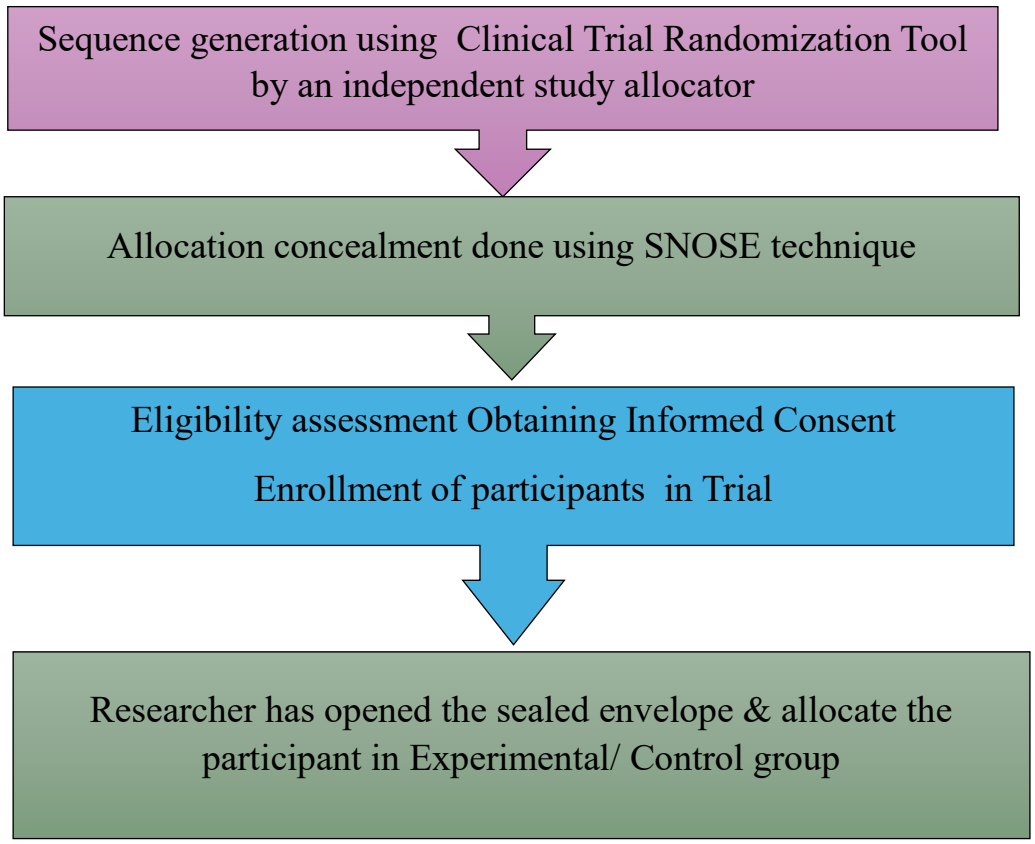
Sequence generation using Clinical Trial Randomization Tool by an independent study allocator
Allocation concealment done using SNOSE technique
Eligibility assessment Obtaining Informed Consent
Enrollment of participants in Trial
Researcher has opened the sealed envelope & allocate the participant in Experimental/ Control group

Figure 3: Randomization Process

Sequentially Numbered Opaque Sealed Envelops

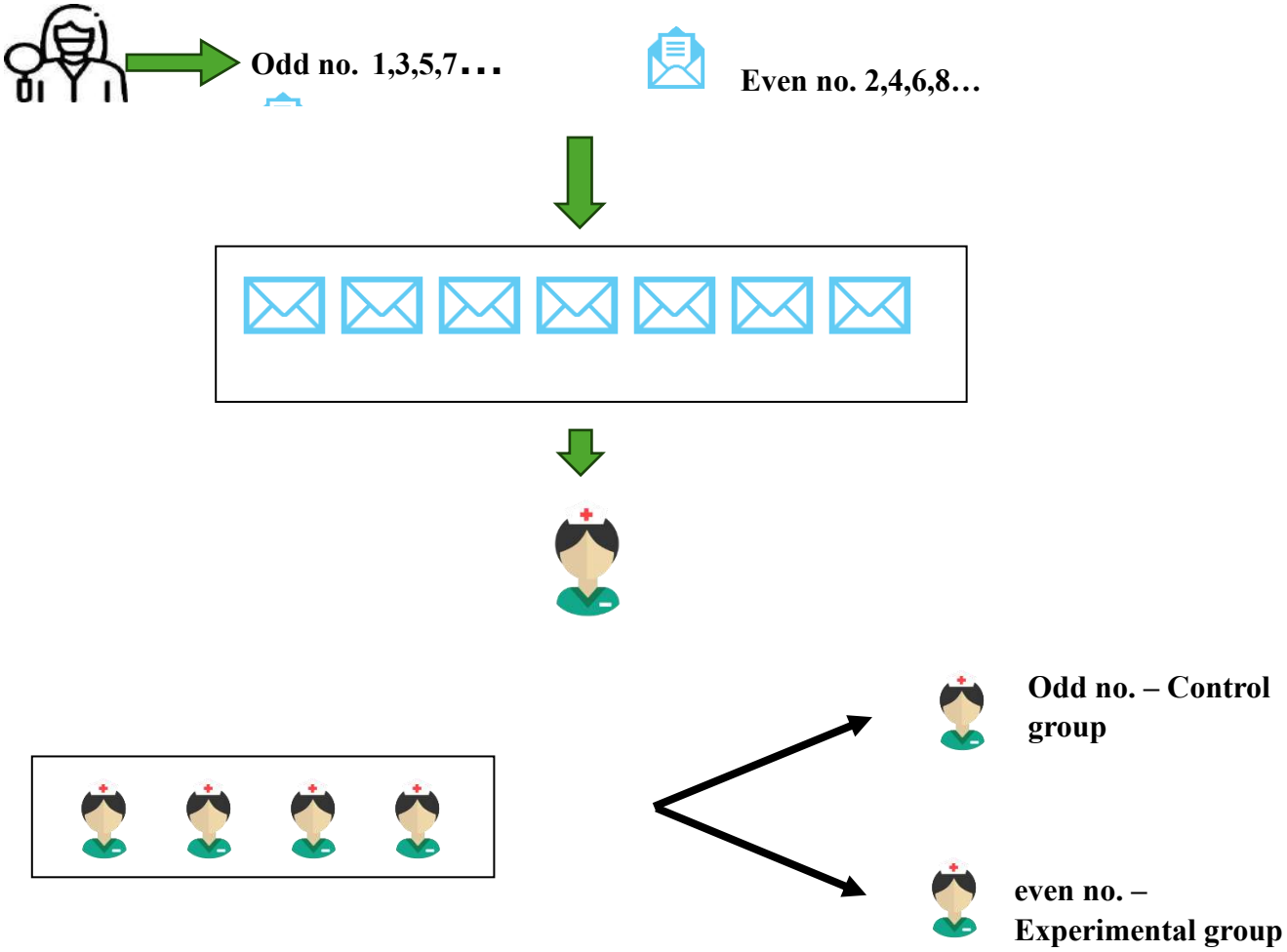

Figure 4 : Diagrammatic presentation Sequentially Numbered Opaque Sealed Envelops

Allocation Ratio - 1:1

Research Variables-

1) **Independent variable:** Video-assisted teaching (VAT)
2) **Dependent variable:** Level of Anxiety and Stress

Research Setting

The study was conducted in the Cardiology ward of All India institute of medical sciences (AIIMS) Bhopal, Madhya Pradesh

Population

1) **Target Population –** All adult patients undergoing PTCA

2) **Accessible Population** – All adult patients undergoing PTCA at AIIMS Bhopal

Sample –

A sample is a Subset of a population selected for study to represent the whole population. It makes inferences about the larger group without studying every

individual. A suitably selected sample ensures the research findings' accuracy, reliability, and generalizability (13).

The study Consists of 40 (20 in the experimental and 20 in the control group) patients undergoing PTCA determined by statistical calculation.

The sample size for this study was determined to be 40 participants, divided into two groups: 20 participants in the experimental group and 20 participants in the control group. The sample size was calculated based on a thorough review of relevant literature and power analysis to ensure adequate statistical power for detecting meaningful differences between the groups.

The formula used for sample size calculation is:

$$N \geq (Z1-\alpha/2 + Z1-\beta)\ 2\ (\sigma1\ 2 + \sigma2\ 2\ /r)\ (\mu1 - \mu2)2$$

$\mu1$: Expected mean of outcome in Experimental group

$\mu2$: Expected mean of outcome in the Control group

$\sigma1$: Expected standard deviation of outcome in Experimental group

$\sigma2$: Expected standard deviation of outcome in Experimental group

Putting the values together- $Z(1-\alpha/2) = 1.96$, $Z(1-\beta) = 0.84$, $\sigma1 = 4$, $\sigma2 = 4$, $\mu1 = 10$, $\mu2 = 8$, and at a 10% attrition rate and rounding off, the calculated sample size was 20 for each group. The total sample size was 40.

Sampling Technique The sample was selected by the Convenient sampling method, those subjects who fulfilled the inclusion and exclusion criteria.

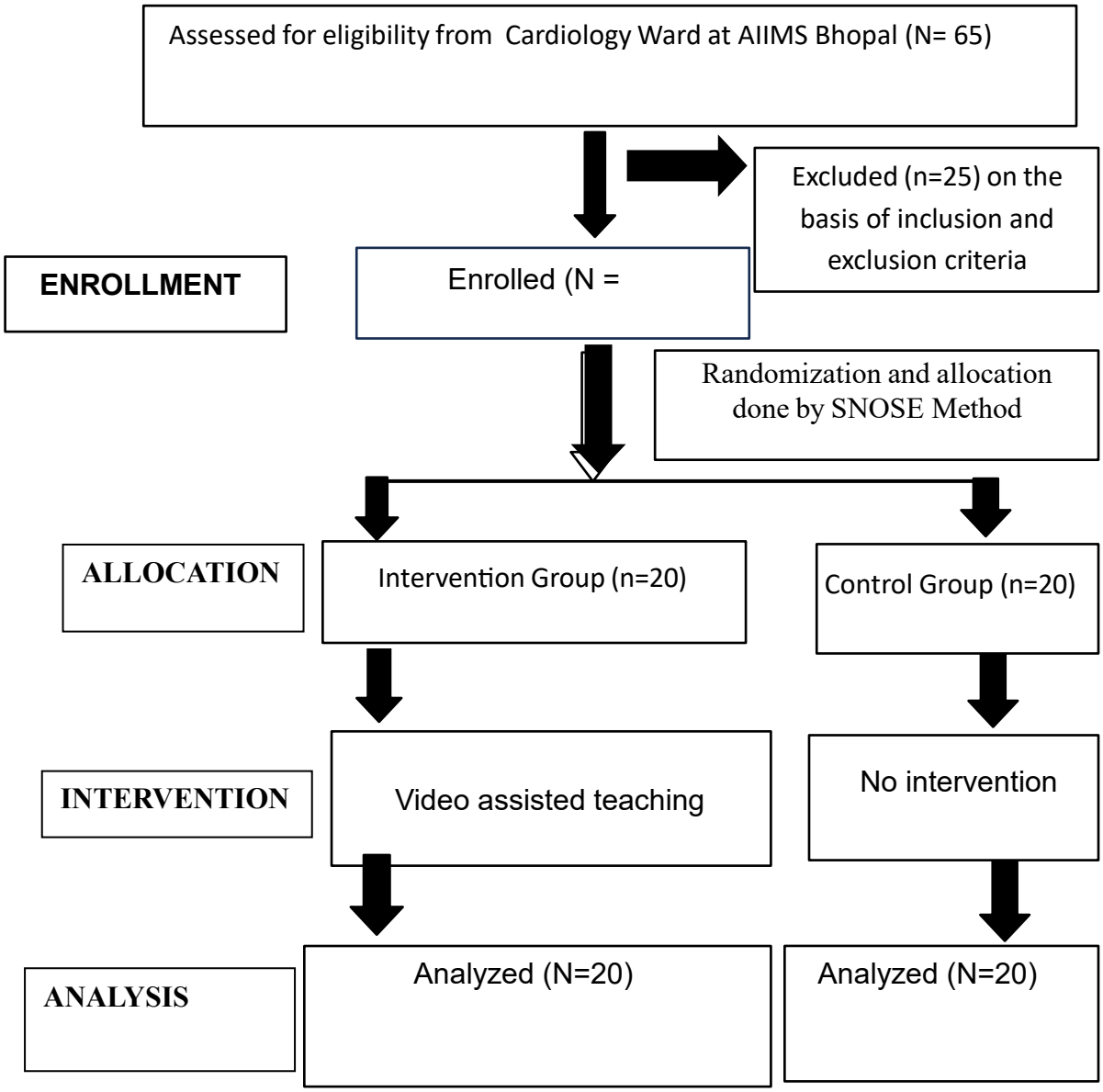

Figure 5 : CONSORT flow diagram of participants

Inclusion Criteria

1. Patients who have been planned for and admitted for elective PTCA.
2. Adult patients aged 20-60 years, both male & female patients undergoing for PTCA.
3. Patients who can read and write Hindi or English.

Exclusion Criteria

1. Patients who have undergone PTCA previously.
2. Patients who are critically ill.
3. Patients who are undergoing emergency PTCA.
4. Patient who has vision and hearing impaired.

Selection and development of tools

Description of tool :- Following tools were used to collect data in the present study

Section 1 – Structured Sociodemographic sheet

Socio-demographic data of patients undergoing PTCA, which includes Age, gender, Educational Qualification, Occupation, Type of family, Family Annual Income, Residential status, Marital Status, and Previous Knowledge about PTCA.

Section 2 – Clinical Profile Sheet

Clinical variables include- do you currently smoke cigarettes or tobacco products? How often do you consume alcohol? Do you have any pre-existing medical conditions?

Section 3:- It was used to assess the Anxiety level of the patient undergoing PTCA by using the Zung self-rating scale

It Contains 20 items with a score of 1- 4 for each item

Scoring ranges from 20-80

Interpretation of the score is as follows:

Normal Range	20-44
Mild to Moderate	45-59
Moderate to Severe	60 -74
Severe Anxiety	75-80

Section 4:- It was used to assess the Stress of patients undergoing PTCA by using the Perceived Stress Scale

It Contains 10 items with a score of 0-4 for each item

Scoring ranges from 0 - 40

Interpretation of the score is as follows:

Low Stress	0- 13

Moderate Stress	14-26
High Stress	27- 40

Validity Of the Tool

The content validity of the tool was checked.

The procedure for content validity included

- Preparing a content validation form
- Selecting a panel of experts
- Conducting Content validation
- Reviewing domain and items
- Providing a score on each item
- Calculating CVI

The content validity of the tool was obtained from 09 experts in the field of Nursing

Individual item content validity index (I-CVI) was calculated by taking the opinion of scores 3 and 4 (highly relevant and quite relevant), and Scale-content validity Index (S-CVI) was calculated by taking an average of I-CVI. The acceptable range of I-CVI is 0.78 or above, and S-CVI is 0.90 or above. All items in the sociodemographic sheet have an I-CVI greater than 0.78 and an S-CVI of 0.92. All items in the Clinical profile sheet have I-CVI greater than 0.78 and S-CVI 0.92

Suggestion of Expert incorporated, and the tool finalized

Tool Translation

- Language validity was ensured by consulting with a language expert.
- Translation to Hindi and back translation was done
- The Hindi version of the research tool for this study was found to be a true and accurate translation of the English version and valid for collecting data for the research

Reliability Of the Tool

The Zung Self-Rating Anxiety Scale (Z-SAS) measures anxiety levels which are divided into normal/not anxious, mild to moderate, severe, and panic. The reliability coefficient alpha of the English version of the Zung self-rating anxiety scale was r-0.76 (wang 2003).

In the current setting reliability of, the Zung self-rating Anxiety Scale was established by the Internal Consistency method on 10 study participants (r = 0.78)

The Perceived Stress Scale is a 10-item questionnaire developed by Cohen et al.1983

Cohen reported that the reliability of this scale is 0.78.

In the current setting, reliability for the Perceived Stress Scale was established by the internal consistency method on 10 study participants **(r = 0.80)**

Description Of Intervention

The researcher prepared a video Explaining Percutaneous Transluminal Coronary Angioplasty as per the latest AHA guidelines and with consultation from Experts in the field of nursing and cardiology.

At the end of the video-assisted teaching , participants would be able to –

- understand the PTCA procedure and its purpose in treating heart conditions.
- identify the steps involved in the PTCA process, including pre-procedure, during the procedure, and post-procedure care.
- recognize the importance of pre-procedural preparations, such as fasting, investigations, and medications.
- identify potential risks and benefits associated with PTCA to reduce uncertainty and anxiety.
- explain the role of stents and balloon catheters in the PTCA procedure.
- clarify common fears and misconceptions about the procedure, thereby reducing anxiety and stress.
- identify post-procedural recovery steps, including monitoring, medications, and lifestyle modifications.
- ask informed questions regarding the procedure, complications, or recovery, with confidence.
- feel more empowered and confident in their decision to undergo ptca, reducing fear and increasing positive mental readiness.

Ethical Consideration

- Permission obtained from concerned authorities (Principal of Nursing college, medical superintendent of AIIM Bhopal)
- Proposal submitted to the institutional ethics committee and permission obtained
- Written informed consent was obtained after giving full disclosure regarding study participation
- Confidentiality of the participant maintained
- This Present trial has been registered to the Clinical Trials registry-India (CTRI) under registration number CTRI/2024/08/072402

Pilot Study

The pilot study is a smaller version of a study carried out before the actual investigation is done. Researchers use information gathered in pilot studies to refine or modify the research methodology for a study and to develop large-scale studies. A pilot study was conducted with a sample size of 4 to check the effectiveness of criterion measures and determine the feasibility of the tool, intervention, and methodology. The average time taken by the study subject to complete the tool was 5-10 minutes. At the end participants were thanked for cooperating with the researcher. The language used in the test items and video intervention was found to be appropriate and clear. The tool and Intervention were finalized for the main project, and arrangements were made for data collection.

Procedure Of Data Collection

- Formal permission was obtained from the concerned authority of the hospital.
- Patients were selected according to the selection criteria.
- The researcher explained the need, purpose, and benefits of the study to the participants and their right to withdraw from the study at any time if they wish.
- Informed consent was obtained from all the patients.
- The researcher collected pre-test information the previous day before the PTCA procedure.
- After collecting the data, the researcher provided video-assisted teaching in a calm environment.
- Adequate explanations were given to the patient.
- On the day of PTCA, the post-test data were collected before the PTCA procedure

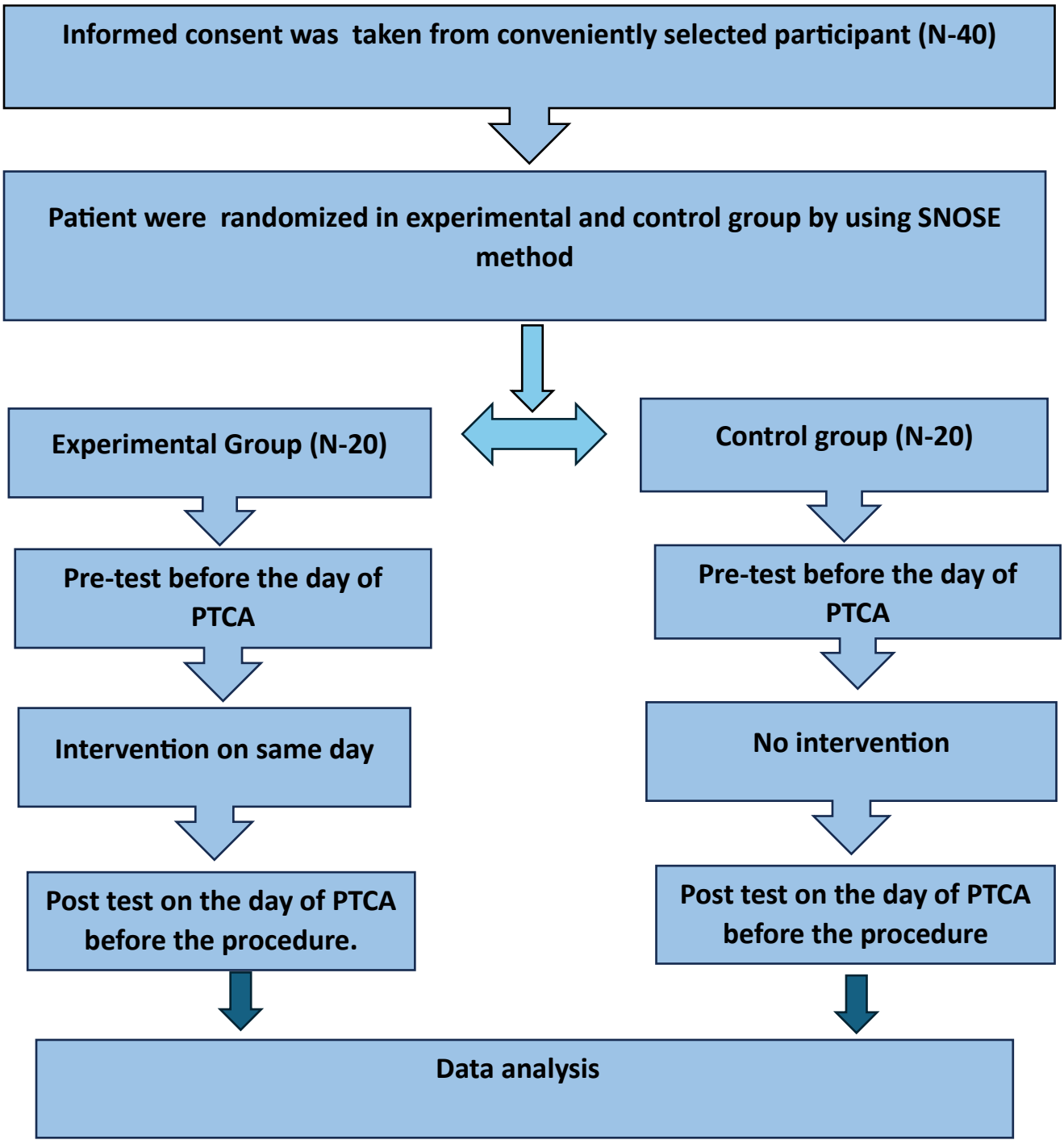
Informed consent was taken from conveniently selected participant (N-40)
Patient were randomized in experimental and control group by using SNOSE method
Experimental Group (N-20)
Control group (N-20)
Pre-test before the day of PTCA
Pre-test before the day of PTCA
Intervention on same day
No intervention
Post test on the day of PTCA before the procedure.
Post test on the day of PTCA before the procedure
Data analysis

Figure 6 : Procedure of data collection

Plan For Data Analysis

Data was analyzed using Microsoft excel and IBM SPSS software version 20 by using descriptive and inferential statistical techniques.

- The distribution of Sociodemographic & clinical variables was analyzed by using frequency and percentage.
- Pre-interventional level of anxiety and stress among patients undergoing PTCA in the experimental and control groups was analysed by mean and standard deviation.
- The effect of video-assisted teaching on the level of anxiety and stress among patients undergoing PTCA was analyzed using a Paired t-test and an independent t-test.
- Association between post-test level of stress and anxiety with selected sociodemographic variables among patients undergoing PTCA in experimental and control groups was analysed by using a chi-square test

Summary

This chapter deals with the description of the research approach, research design, research setting, study population, sample and sampling technique, selection and development of the tool, description of the tool, the validity of the tool, reliability of the tool, ethical considerations, pilot study, final data collection procedure, and procedure of data analysis.

CHAPTER IV

RESULTS

This chapter delves into the comprehensive analysis and interpretation of the data gathered to evaluate the impact of video-assisted teaching on anxiety and stress among patients undergoing PTCA, encompassing data from 40 participants, with 20 in the interventional group and 20 in the control group.

As Polit and Hungler assert, data analysis is a systematic process that involves organizing and synthesizing data to address research questions and test hypotheses. Descriptive and inferential statistics were employed to tabulate, scrutinize, and interpret the acquired data under the study's overarching goals. The data collected by the researcher underwent meticulous analysis utilizing MS Excel 365 and IBM SPSS Statistics (Version 22), aligning with the predefined objectives of the study.

Organization and presentation of the findings-The presentation of the study findings is structured as follows:

Section I: Sample Characteristics: This section provides an overview of the socio-demographic and clinical characteristics of the sampled population.

Section II: Assessment of existing pre-interventional level of anxiety and stress among patients undergoing PTCA in experimental and control groups.

Section III: Assessment of the effect of video-assisted teaching on the level of anxiety and stress among patients undergoing PTCA

Section IV: Association between post-test level of stress and anxiety with selected sociodemographic variable among patients undergoing PTCA in experimental and control groups.

Section I: Sample Characteristics: This section provides an overview of the socio-demographic and clinical characteristics of the sampled population.

This section provides a detailed account of the socio-demographic and clinical attributes of the study participants. The socio-demographical data encompass aspects such as age (in years), gender, Occupation, Educational qualification, Residential status, Family annual income, Marital status, Previous knowledge about PTCA, Clinical data encompass aspects such as currently smoking cigarettes or use any other tobacco products, consume alcohol, any pre-existing medical condition.

Table 4.1. Frequency, percentage distribution of socio-demographical variables and assessment of homogeneity of characteristics between the groups (N=40)

Characteristics	Categories	Experimental group (n=20)		control Group (n=20)		Chi-square value	df	P value
		f	%	f	%			
Age (In Years)	20-34	2	10	1	5	0.37	2	0.82
	35-49	11	**55**	12	**60**			
	50-64	7	35	7	35			
	65-80	0	0	0	0			
Gender	Male	11	55	12	60	0.102	1	0.74
	Female	9	45	8	40			
Educational qualification	**Primary**	6	**30**	5	**25**	7.23	6	0.30
	Illiterate	0	0	5	**25**			
	Secondary	5	25	5	**25**			

	Middle	4	20	3	15			
	Higher sec.	1	5	1	5			
	Graduate	3	15	1	5			
	Postgraduate	1	5	0	0			
Occupation	**Private sector**	8	40	9	**45**	0.11	3	0.99
	Govt.sector	1	5	1	5			
	Business	1	5	1	5			
	Other	10	**50**	9	**45**			
Type of Family	Nuclear	15	**75**	11	**55**	1.75	1	0.18
	Joint	5	25	9	45			
Family Annual Income	**<50,000**	1	5	0	0	1.37	2	0.504
	50,000-100000	14	**70**	13	**65**			
	>100000	5	25	7	35			
Residential status	Rural	15	**75**	16	**80**	0.14	1	0.70
	urban	5	25	4	20			
Marital status	Married	19	**95**	19	**95**	0.00	1	1.0
	Single	1	5	1	5			

	widowed	0	0	0	0			
Previous knowledge about PTCA	**Yes**	1	5	0	0	1.02	1	0.31
	No	19	**95**	20	**100**			

Table 4.1 presents the baseline characteristics of socio-demographic variables for participants in both the intervention and control groups. The chi-square values and corresponding p-values assess the homogeneity of characteristics between the intervention and control groups. The p-value greater than 0.05 for all the variables indicates no significant difference between the groups, affirming that, at the 0.05 level of significance, the baseline characteristics of both groups were comparable.

Sociodemographic Characteristics

The study included 40 participants, equally divided into an experimental group (n=20) and a control group (n=20). The age distribution across both groups was similar, with the majority of participants aged between 35-49 years (55% in the experimental group and 60% in the control group). The chi-square analysis revealed no significant difference between the two groups in terms of age ($\chi 2=0.37\chi^2 = 0.37$, $df=2df = 2$, $p=0.82p = 0.82$).

Gender distribution was also comparable, with 55% males in the experimental group and 60% in the control group ($\chi 2=0.102\chi^2 = 0.102$, $df=1df = 1$, $p=0.74p = 0.74$).

Educational qualification did not show significant differences between groups ($\chi2=7.23\chi^2 = 7.23$, $df=6df = 6$, $p=0.30p = 0.30$). Notably, 25% of the control group participants were illiterate, while none in the experimental group fell into this category.

Regarding occupation, most participants belonged to the private sector (40% in the experimental group and 45% in the control group), followed by those in the "other" category (50% in the experimental group and 45% in the control group). There was no statistically significant difference in occupation ($\chi2=0.11\chi^2 = 0.11$, $df=3df = 3$, $p=0.99p = 0.99$).

Family structure varied, with a higher proportion of nuclear families in the experimental group (75%) compared to the control group (55%). However, this difference was not statistically significant ($\chi2=1.75\chi^2 = 1.75$, $df=1df = 1$, $p=0.18p = 0.18$). Family annual income distribution showed that most participants had an income between 50,000-100,000 INR per year (70% in the experimental group and 65% in the control group), with no significant difference observed ($\chi2=1.37\chi^2 = 1.37$, $df=2df = 2$, $p=0.504p = 0.504$).

Residential status and marital status were also similar across groups. The majority of participants resided in rural areas (75% in the experimental group and 80% in the control group; $\chi2=0.14\chi^2 = 0.14$, $df=1df = 1$, $p=0.70p = 0.70$), and nearly all were married (95% in both groups; $\chi2=0.00\chi^2 = 0.00$, $df=1df = 1$, $p=1.00p = 1.00$). Previous knowledge about PTCA was limited, with only one participant in the experimental group reporting prior awareness ($\chi2=1.02\chi^2 = 1.02$, $df=1df = 1$, $p=0.31p = 0.31$).

Table 4.2 - Frequency, percentage distribution of clinical variables, and assessment of homogeneity of characteristics between the groups (N=40)

Characteristics	Categories	Experimental group (n=20)		control Group (n=20)		Chi-square value	df	P value
		f	%	f	%			
Do you currently smoke cigarettes or use any other tobacco products?	**No**	10	50	10	50	0.00	1	1.00
	Yes	10	50	10	50			
Do you consume alcohol?	**No**	12	60	15	75	1.02	1	0.31
	Yes	8	40	5	25			
Do you have any pre-existing medical condition?	**No**	19	95	19	95	0.00	1	1.00
	yes	1	5	1	5			
	Yes	0	0	0	0			

Half of the participants in both groups reported smoking or using tobacco products (50% in each group; $\chi2=0.00\backslash chi^2 = 0.00$, $df=1df = 1$, $p=1.00p = 1.00$). Alcohol consumption was slightly higher in the experimental group (40%) compared to the control group (25%), but the difference was not statistically significant ($\chi2=1.02\backslash chi^2 = 1.02$, $df=1df = 1$, $p=0.31p = 0.31$).

Regarding pre-existing medical conditions, only one participant in each group reported having a pre-existing condition ($\chi2=0.00\backslash chi^2 = 0.00$, $df=1df = 1$, $p=1.00p = 1.00$).

Section II: **Assessment of existing pre-interventional level of anxiety and stress among patients undergoing PTCA in experimental and control groups.**

Table 4.3 – Comparison of Pre interventional level of Stress in Experimental vs Control group (N-20)

Level of Stress	Experimental group (n=20)				Control group (n=20)			
	Frequency	%	Mean	S.D	Frequency	%	Mean	S.D
Low stress	0	0	22.25	2.936	0	0	22.35	2.254
Moderate stress	19	95			20	100		
High stress	1	5			0	0		

In terms of stress, the experimental group had a mean score of 22.25 (SD = 2.936), with 95% (n=19) experiencing moderate stress and 5% (n=1) experiencing high stress. In contrast, the control group recorded a mean stress score of 22.35 (SD = 2.254), with all participants (100%) reporting moderate stress. No participants in either group reported low-stress levels. This indicates that stress levels were fairly consistent between the two groups, with only minor differences in mean scores.

Table 4.4 – Comparison of the pre-interventional level of Anxiety in the Experimental vs. Control group. (N-20)

Level of Anxiety	Experimental group (n=20)				Control group (n=20)			
	Frequency	%	Mean	S.D	Frequency	%	Mean	S.D
Normal range	1	5	52.30	4.747	1	5	51.10	3.669
Mild to moderate	17	85			19	95		
Moderate to severe	2	10			0	0		

Severe Anxiety	0	0			0	0		

Regarding anxiety, 5% (n=1) of participants in both groups fell within the normal range. In the experimental group, 85% (n=17) experienced mild to moderate anxiety, while 10% (n=2) reported moderate to severe anxiety. On the other hand, in the control group, 95% (n=19) experienced mild to moderate anxiety, with no participants reporting moderate to severe or severe anxiety. The mean anxiety score for the experimental group was slightly higher (52.30, SD = 4.747) than the control group (51.10, SD = 3.669), indicating a slight difference in anxiety severity.

Comparative analysis suggests that while stress levels between both groups remained almost identical, the experimental group exhibited a broader distribution of anxiety levels, with some participants experiencing moderate to severe anxiety. This variation implies that the experimental group may have been exposed to certain factors influencing higher anxiety levels, though further investigation is necessary to determine the underlying causes.

Section III: Assessment of the effect of video-assisted teaching on the level of anxiety and stress among patients undergoing PTCA using independent t-test and paired t-test

Table 4.5- Comparison of pre-interventional level of Stress and Anxiety between the Experimental and Control groups. (N-40)

Pair (experimental group and control group)	**T Value**	**df**	**p Value**
Pre-Interventional Stress OF E&C	**0.121**	38	**0.904(NS)**
Pre-Interventional Anxiety OF E&C	**-0.89**	38	**0.377(NS)**

To assess the baseline comparability between the experimental and control groups, an independent t-test was conducted for pre-intervention stress and anxiety levels. The results revealed no statistically significant difference between the two groups for pre-intervention stress ($t = 0.121$, $df = 38$, $p = 0.904$) and pre-intervention anxiety ($t = -0.89$, $df = 38$, $p = 0.377$). These findings indicate that both groups were comparable in terms of stress and anxiety before the intervention.

Table 4.6 - Comparison of the post-interventional level of Stress and Anxiety between the Experimental and Control groups. (N-40)

Pair (experimental group and control group)	**t Value**	**df**	**p Value**
Post Interventional Stress OF E&C	**0.991**	38	**0.002(S)**
Post Interventional Anxiety OF E&C	**2.88**	38	**0.006(S)**

Following the intervention, an independent t-test was performed to examine stress and anxiety levels differences between the experimental and control groups. A significant difference was observed in post-interventional stress levels ($t = 0.991$, $df = 38$, $p = 0.002$), indicating that the intervention had a statistically significant impact. Similarly, post-interventional anxiety levels also showed a significant difference ($t = 2.88$, $df = 38$, $p = 0.006$), further confirming the effectiveness of the intervention.

Table 4.7 - Comparison of the pre and post-interventional levels of stress and anxiety in the experimental group (N-20)

Pair	Mean Difference	Standard Deviation	t Value	df	P Value
PreStressE-PostStressE	2.750	1.997	**6.159**	19	**0.00**
PreAnxietyE-PostAnxietyE	4.600	3.515	**5.852**	19	**0.00**

A paired t-test was conducted within the experimental group to evaluate changes in stress and anxiety levels before and after the intervention. The results demonstrated a significant reduction in stress levels (Mean Difference = 2.750, SD = 1.997, t = 6.159, df = 19, $p < 0.001$) and anxiety levels (Mean Difference = 4.600, SD = 3.515, t = 5.852, df = 19, $p < 0.001$), indicating that the intervention effectively reduced stress and anxiety within the experimental group.

Table 4.8 - Comparison of the pre and post-interventional levels of stress and anxiety in the control group (N-20)

Pair	Mean Difference	Standard Deviation	t Value	df	P Value
PreStressC-PostStressC	0.300	1.302	**1.031**	19	**0.316**
PreAnxietyC-PostAnxietyC	-0.650	2.033	**-1.430**	19	**0.169**

Within the control group, a paired t-test was conducted to assess any changes in stress and anxiety levels over time. The results showed no significant change in stress levels (Mean Difference = 0.300, SD = 1.302, t = 1.031, df = 19, p = 0.316) or anxiety levels (Mean Difference = -0.650, SD = 2.033, t = -1.430, df = 19, p = 0.169). These findings suggest that, in the absence of an intervention, stress and anxiety levels remained relatively stable within the control group.

Section IV: Association between post-test level of stress and anxiety with selected sociodemographic variable among patients undergoing PTCA in experimental and control groups.

Table 4.9 : Association of the post-test level of anxiety with selected sociodemographic variable in experimental. (N-40)

Demographic Variables		Anxiety				Chi-square Test		
		Normal range	Mild to moderate	Moderate to severe	Severe anxiety	Chi-square value	DF value	P-value
Age	20-34	1	1	0	0	1.29	2	0.52
	35-49	2	9	0	0			
	50-64	1	6	0	0			
	65-80	0	0	0	0			
Gender	Male	3	8	0	0	0.80	1	0.36
	Female	1	8	0	0			
Educational Status	Primary school	0	6	0	0	11.1	5	0.04
	Illiterate	0	0	0	0			
	Secondary	0	5	0	0			
	Middle	1	3	0	0			
	Higher secondary	1	0	0	0			
	Graduate	1	2	0	0			
	Post graduate	1	0	0	0			

Occupation	Private sector	2	6	0	0	5.0	3	0.17
	Government sector	0	1	0	0			
	business	1	0	0	0			
	Other	1	9	0	0			
Type of family	Nuclear	4	11	0	0	1.6	1	0.19
	Joint	0	5	0	0			
Family annual income	<50,000	1	0	0	0	6.69	2	0.035
	50,000-100,000	1	13	0	0			
	>100,000	2	3	0	0			
Residential Status	Rural	3	12	0	0	0.00	1	1.0
	Urban	1	4	0	0			
Marital status	Married	4	15	0	0	0.26	1	0.608
	Single	0	1	0	0			
	Widowed	0	0	0	0			

There was no significant association between post-anxiety scores and demographic variables in the experimental group.

Table 4.10: Association of the post-test level of anxiety with a selected sociodemographic variable in the control group. (N-40)

Demographic Variables		Anxiety				Chi-square Test		
		Normal range	Mild to moderate	Moderate to severe	Severe anxiety	Chi-square value	DF value	P-value
Age	20-34	0	1	0	0			
	35-49	0	12	0	0			
	50-64	0	7	0	0			
	65-80	0	0	0	0			
Gender	Male	0	12	0	0			
	Female	0	8	0	0			
Educational Status	Primary school	0	5	0	0			
	Illiterate	0	5	0	0			
	Secondary	0	5	0	0			
	Middle	0	3	0	0			
	Higher secondary	0	1	0	0			
	Graduate	0	1	0	0			
	Post graduate	0	0	0	0			
Occupation	Private sector	0	9	0	0			
	Government sector	0	1	0	0			

	business	0	1	0	0	
	Other	0	9	0	0	
Type of family	Nuclear	0	11	0	0	
	Joint	0	9	0	0	
Family annual income	<50,000	0	0	0	0	
	50,000-100,000	0	13	0	0	
	>100,000	0	7	0	0	
Residential Status	Rural	0	16	0	0	
	Urban	0	4	0	0	
Marital status	Married	0	19	0	0	
	Single	0	1	0	0	
	Widowed	0	0	0	0	

Remark- The chi-square test was not applied for the association between post-test anxiety levels and the selected sociodemographic variable in the control group because the data fell into a single category, making statistical comparison infeasible.

Table 4.11: Association of the post-test level of stress with selected sociodemographic variable in the experimental group.

Demographic Variables		Stress					
		Low stress	moderate stress	High stress	Chi-square value	DF value	P-value
Age	20-34	0	2	0			
	35-49	0	11	0			
	50-64	0	7	0			
	65-80	0	0	0			
Gender	Male	0	11	0			
	Female	0	9	0			
Educational Status	Primary school	0	6	0			
	Illiterate	0	0	0			
	Secondary	0	5	0			
	Middle	0	4	0			
	Higher secondary	0	1	0			
	Graduate	0	3	0			
	Post graduate	0	1	0			
Occupation	Private sector	0	8	0			
	Government sector	0	1	0			
	business	0	1	0			

	Other	0	10	0	
Type of family	Nuclear	0	15	0	
	Joint	0	5	0	
Family annual income	<50,000	0	1	0	
	50,000-100,000	0	14	0	
	>100,000	0	5	0	
Residential Status	Rural	0	15	0	
	Urban	0	5	0	
Marital status	Married	0	19	0	
	Single	0	1	0	
	Widowed	0	0	0	

Remarks- The chi-square test was not applied for the Association of the post-test level of stress with selected sociodemographic variables in the experimental group because the data fell into a single category, making statistical comparison infeasible

Table 4.12: Association of the post-test level of stress with selected sociodemographic variable in the control group. (N-40)

Demographic Variables		Stress						
		Low stress	moderate stress	High stress		Chi-square value	DF value	P-value
Age	20-34	0	1	0				
	35-49	0	12	0				
	50-64	0	7	0				
	65-80	0	0	0				
Gender	Male	0	12	0				
	Female	0	8	0				
Educational Status	Primary school	0	5	0				
	Illiterate	0	5	0				
	Secondary	0	5	0				
	Middle	0	3	0				
	Higher secondary	0	1	0				
	Graduate	0	1	0				
	Post graduate	0	0	0				
Occupation	Private sector	0	9	0				
	Government sector	0	1	0				

	business	0	1	0		
	Other	0	9	0		
Type of family	Nuclear	0	11	0		
	Joint	0	9	0		
Family annual income	<50,000	0	0	0		
	50,000-100,000	0	13	0		
	>100,000	0	7	0		
Residential Status	Rural	0	16	0		
	Urban	0	4	0		
Marital status	Married	0	19	0		
	Single	0	1	0		
	Widowed	0	0	0		

Remark- The chi-square test was not applied for the Association of the post-test stress level with selected sociodemographic variables in the control group**.** because the data fell into a single category, making statistical comparison infeasible

From the above results, the null hypothesis was H01 rejected and H02 accepted. i.e.

H1: There is a significant difference in the post-test levels of anxiety and stress among patients undergoing PTCA in the experimental and control groups at 0.05 level of significance.

H02: There is no significant association of post-test levels of anxiety and stress with selected demographic variables among patients undergoing PTCA in the experimental and control groups at 0.05 level of significance.

Summary:

This chapter discussed the results or findings of the study with their analysis and interpretation according to research objectives. The results of the study were organised into different sections like information on sample characteristics, comparison of anxiety and stress among patient undergoing PTCA in both group and association of post-test level of anxiety and stress with selected demographic variables. The next and last chapter dealt with the discussion of present study findings with other study findings.

CHAPTER V
DISCUSSION

Introduction

The present study was intended to measure the comparison of anxiety and stress among patient undergoing PTCA in both group and association of post-test level of anxiety and stress with selected demographic variables. A randomized controlled trial, pretest post-test prospective randomized controlled trial was aptly used to execute intend of the study. Sample size consist of 40 among patient undergoing PTCA i.e., 20 participants in intervention group and 20 in control group. Baseline assessment along with details about demographic variables was done. **S**tructured intervention designed by the researcher was implemented for intervention group participants. Post test was conducted after next day of intervention.

This chapter dealt with the summary of the study, highlights of major finding, implication, strength, limitation and recommendation for further studies.

Objectives Of the Study

1. To assess pre-interventional level of anxiety and stress among patients undergoing PTCA in experimental and control group at AIIMS Bhopal.
2. To assess the effect of video assisted teaching on level of anxiety and stress among patients undergoing PTCA at AIIMS Bhopal

3. To find out association between post-test level of stress and anxiety with selected sociodemographic variable among patient undergoing PTCA in experimental and control group at AIIMS Bhopal

Major findings of the study

The study included 40 participants, equally divided into an experimental group (n=20) and a control group (n=20). The age distribution across both groups was similar, with the majority of participants aged between 35-49 years (55% in the experimental group and 60% in the control group). The chi-square analysis revealed no significant difference between the two groups in terms of age ($\chi 2=0.37\chi^2 = 0.37$, $df=2df = 2$, $p=0.82p = 0.82$). Gender distribution was also comparable, with 55% males in the experimental group and 60% in the control group ($\chi 2=0.102\chi^2 = 0.102$, $df=1df = 1$, $p=0.74p = 0.74$). Educational qualification did not show significant differences between groups ($\chi 2=7.23\chi^2 = 7.23$, $df=6df = 6$, $p=0.30p = 0.30$). Notably, 25% of the control group participants were illiterate, while none in the experimental group fell into this category.

Regarding occupation, most participants belonged to the private sector (40% in the experimental group and 45% in the control group), followed by those in the "other" category (50% in the experimental group and 45% in the control group). There was no statistically significant difference in occupation ($\chi 2=0.11\chi^2 = 0.11$, $df=3df = 3$, $p=0.99p = 0.99$).

Family structure varied, with a higher proportion of nuclear families in the experimental group (75%) compared to the control group (55%). However, this

difference was not statistically significant (χ2=1.75\chi^2 = 1.75, df=1df = 1, p=0.18p = 0.18). Family annual income distribution showed that most participants had an income between 50,000-100,000 INR per year (70% in the experimental group and 65% in the control group), with no significant difference observed (χ2=1.37\chi^2 = 1.37, df=2df = 2, p=0.504p = 0.504).

Residential status and marital status were also similar across groups. The majority of participants resided in rural areas (75% in the experimental group and 80% in the control group; χ2=0.14\chi^2 = 0.14, df=1df = 1, p=0.70p = 0.70), and nearly all were married (95% in both groups; χ2=0.00\chi^2 = 0.00, df=1df = 1, p=1.00p = 1.00). Previous knowledge about PTCA was limited, with only one participant in the experimental group reporting prior awareness (χ2=1.02\chi^2 = 1.02, df=1df = 1, p=0.31p = 0.31).

Clinical Variables Half of the participants in both groups reported smoking or using tobacco products (50% in each group; χ2=0.00\chi^2 = 0.00, df=1df = 1, p=1.00p = 1.00). Alcohol consumption was slightly higher in the experimental group (40%) compared to the control group (25%), but the difference was not statistically significant (χ2=1.02\chi^2 = 1.02, df=1df = 1, p=0.31p = 0.31). Regarding pre-existing medical conditions, only one participant in each group reported having a pre-existing condition (χ2=0.00\chi^2 = 0.00, df=1df = 1, p=1.00p = 1.00). Stress and anxiety levels in both the experimental and control groups revealed notable trends. In terms of stress, the experimental group had a mean score of 22.25 (SD = 2.936), with 95% (n=19) experiencing moderate stress and 5% (n=1) experiencing high stress. In contrast, the control group recorded a mean stress score of 22.35 (SD = 2.254), with all participants (100%) reporting moderate stress. No participants in

either group reported low stress levels. This indicates that stress levels were fairly consistent between the two groups, with only minor differences in mean score.

Regarding anxiety, 5% (n=1) of participants in both groups fell within the normal range. In the experimental group, 85% (n=17) experienced mild to moderate anxiety, while 10% (n=2) reported moderate to severe anxiety. On the other hand, in the control group, 95% (n=19) experienced mild to moderate anxiety, with no participants reporting moderate to severe or severe anxiety. The mean anxiety score for the experimental group was slightly higher (52.30, SD = 4.747) than the control group (51.10, SD = 3.669), indicating a slight difference in anxiety severity.

To assess the baseline comparability between the experimental and control groups, an independent t-test was conducted for pre-intervention stress and anxiety levels. The results revealed no statistically significant difference between the two groups for pre-intervention stress ($t = 0.121$, $df = 38$, $p = 0.904$) and pre-intervention anxiety ($t = -0.89$, $df = 38$, $p = 0.377$). These findings indicate that both groups were comparable in terms of stress and anxiety before the intervention.

Following the intervention, an independent t-test was performed to examine differences in stress and anxiety levels between the experimental and control groups. A significant difference was observed in post-interventional stress levels ($t = 0.991$, $df = 38$, $p = 0.002$), indicating that the intervention had a statistically significant impact. Similarly, post-interventional anxiety levels also showed a significant difference ($t = 2.88$, $df = 38$, $p = 0.006$), further confirming the effectiveness of the intervention.

A paired t-test was conducted within the experimental group to evaluate changes in stress and anxiety levels before and after the intervention. The results demonstrated

a significant reduction in stress levels (Mean Difference = 2.750, SD = 1.997, t = 6.159, df = 19, $p < 0.001$) and anxiety levels (Mean Difference = 4.600, SD = 3.515, t = 5.852, df = 19, $p < 0.001$), indicating that the intervention effectively reduced stress and anxiety within the experimental group.

Within the control group, a paired t-test was conducted to assess any changes in stress and anxiety levels over time. The results showed no significant change in stress levels (Mean Difference = 0.300, SD = 1.302, t = 1.031, df = 19, p = 0.316) or anxiety levels (Mean Difference = -0.650, SD = 2.033, t = -1.430, df = 19, p = 0.169).

No significant association between post-anxiety scores and demographic variables in experimental group.

No significant association between post-anxiety scores and demographic variables in control group

No significant association between post-stress scores and demographic variables in experimental group.

No significant association between post-stress scores and demographic variables in control group.

Section I: Sample Characteristics: This section provides an overview of the socio-demographic and clinical characteristics of the sampled population.

Our study found that 95% of participants in the experimental group and 100% in the control group reported moderate stress levels, with only 5% experiencing severe stress. This is consistent with Astin et al. (2005) 111, who reported that 88% of PTCA patients experienced moderate stress, with 12% facing severe stress.

Similarly, Saini et al. (2022) 444 observed that 85% of patients had moderate stress, while 15% experienced severe anxiety. However, our study reported slightly lower severe stress levels (5%), which could be due to variations in sample characteristics, psychological resilience, or the support systems available to our participants. Age has been identified as an influencing factor in psychological distress among PTCA patients. Astin et al. (2005) 333 reported that patients aged 40-55 years had a higher percentage of severe anxiety (18%) than younger patients. In contrast, our study, where the majority of participants were between 35-49 years, found only 5% reporting severe stress. Saini et al. (2022) 666 also noted that younger patients (30-50 years) had slightly higher stress scores, suggesting that middle-aged individuals might experience stress differently based on social, financial, and health-related concerns. However, unlike these studies, our results did not indicate a significant association between age and stress levels, suggesting the need for further investigation.

Prior knowledge about PTCA procedures has been shown to reduce anxiety levels among patients. In our study, only one participant (5%) reported prior awareness of PTCA, which limited our ability to analyze its impact on stress. In contrast, Saini et al. (2022) 555 found that 25% of PTCA patients had prior knowledge, and Astin et al. (2005) 777 reported an even higher rate of 30%. These studies highlighted that patients with greater awareness of PTCA had lower anxiety scores. The low percentage of prior knowledge in our study suggests a potential gap in patient education, indicating the need for improved pre-procedure counseling. Tobacco and alcohol use are commonly reported among PTCA patients. Our study found that 50% of participants in both groups used tobacco, which closely aligns with Saini et al. (2022) 444 (48%) and Astin et al. (2005) 111 (55%). Similarly,

alcohol consumption in our control group (25%) was comparable to Saini et al. (2022) 444 (35%), while the experimental group showed a slightly higher percentage (40%). The variation in alcohol use could be attributed to lifestyle factors, regional differences, or sample size. Given the established link between substance use and cardiovascular health, these findings highlight the importance of integrating lifestyle modification programs into PTCA patient care. Studies have shown that anxiety levels tend to decrease after PTCA. Astin et al. (2005) 555 found that pre-procedure anxiety affected 88% of patients, but this dropped to 40% post-procedure. Similarly, Saini et al. (2022) 666 reported a decrease in anxiety from 85% to 42% after the procedure. However, our study did not assess post-procedure anxiety, making it difficult to compare whether stress levels declined following PTCA. Future studies should incorporate longitudinal follow-ups to evaluate changes in psychological distress over time.

Section II: Assessment of existing pre-interventional level of anxiety and stress among patients undergoing PTCA in experimental and control groups.

In study, the experimental and control groups both reported predominantly moderate stress levels, with mean scores of 22.25 (SD = 2.936) and 22.35 (SD = 2.254), respectively. The majority of participants in both groups experienced moderate stress, which aligns with the findings of Astin et al. (2005) [3] and Saini et al. (2022) [8], both of which also reported moderate levels of psychological distress, particularly anxiety and depression, in PTCA patients. The minimal difference in stress levels between our experimental and control groups further mirrors the consistency found in those studies.

In terms of **anxiety**, study showed a slightly higher mean score for the experimental group (52.30, SD = 4.747) compared to the control group (51.10, SD = 3.669). This

is in line with the general trend found in Astin et al. (2005) [9] and Saini et al. (2022) [12], where varying degrees of anxiety were observed, though no specific mention of marginally higher anxiety in one group was made. However, our findings of 10% of the experimental group experiencing moderate to severe anxiety, compared to no one in the control group, provide a contrast to these studies, which generally report mild to moderate anxiety without significant escalation.

Both studies from Astin et al. (2005) [7] and Saini et al. (2022) [6] also emphasized that while anxiety was common, the distribution among patients was relatively consistent across their groups, resembling the results from our study.

Section III: Assessment the effect of video-assisted teaching on the level of anxiety and stress among patients undergoing PTCA

The study showed no statistically significant differences between the experimental and control groups for pre-intervention stress ($t = 0.121$, $p = 0.904$) and anxiety ($t = -0.89$, $p = 0.377$), indicating that both groups were similar before the intervention. This finding is consistent with Astin et al. (2005) [3], who also found that there were no significant differences in baseline anxiety and depression levels among patients undergoing PTCA before any interventions. Similarly, Saini et al. (2022) [4] in their meta-analysis found no baseline differences in psychological distress across groups before intervention, which aligns with our study's baseline results.

After the intervention, study reported significant differences in post-intervention stress ($t = 0.991$, $p = 0.002$) and anxiety levels ($t = 2.88$, $p = 0.006$) between the experimental and control groups, suggesting the intervention's effectiveness. This is in agreement with Astin et al. (2005) [5], who found significant improvements in anxiety and depression post-PTCA intervention. Specifically, their longitudinal study noted reductions in anxiety among patients receiving psychological support

after PTCA. Additionally, Saini et al. (2022) [6] demonstrated that interventions led to significant improvements in psychological outcomes, particularly anxiety and depression, among PTCA patients. Thus, both our results and these studies support the idea that targeted interventions can significantly reduce stress and anxiety in PTCA patients.

Within the experimental group, the present study found a significant reduction in stress (Mean Difference = 2.750, $t = 6.159$, $p < 0.001$) and anxiety (Mean Difference = 4.600, $t = 5.852$, $p < 0.001$), indicating a notable effect of the intervention. This finding mirrors the work of Saini et al. (2022) [12], who reported a significant reduction in psychological distress in PTCA patients after psychological interventions. Astin et al. (2005) [7] also found similar results in their study, where psychological support led to reductions in anxiety and depression. The consistency of these findings across studies underscores the positive impact of psychological interventions on mental health outcomes for PTCA patients.

In contrast, the control group in study showed no significant changes in stress (Mean Difference = 0.300, $p = 0.316$) or anxiety (Mean Difference = -0.650, $p = 0.169$). This lack of change mirrors the findings of Astin et al. (2005) [9] and Saini et al. (2022) [10], who also observed no significant improvements in psychological outcomes for control groups that did not receive the targeted interventions.

Section IV: Association between post-test level of stress and anxiety with selected sociodemographic variable among patient undergoing PTCA in experimental and control group.

Study found no significant association between post-anxiety scores and demographic variables in both the experimental ($p = 0.204$) and control groups (p

= 0.384), as well as no significant association between post-stress scores and demographic variables in either group ($p = 0.228$ for experimental and $p = 0.312$ for control). This result is consistent with the findings in several of the studies by Astin et al. (2005), such as Astin, Jones, & Thompson (2005) [1], which reported no significant correlations between anxiety levels and demographic variables (age, gender, etc.) in PTCA patients. Additionally, Astin & Robinson (2005) [7] also observed that demographic characteristics did not significantly predict psychological outcomes, including anxiety and stress, in their study of PTCA patients, further supporting our results.

Similarly, Saini et al. (2022) [6] in their study on the psychological outcomes of PTCA interventions, found that demographic factors such as age, gender, and marital status did not significantly affect post-intervention anxiety and depression levels. This aligns with our results, where no significant associations were found between demographic variables and post-intervention stress and anxiety in both groups. Moreover, Astin et al. (2005) [9] found that although interventions may lead to reductions in psychological distress, these changes were not significantly associated with demographic factors. This supports our finding that demographic variables did not influence post-intervention outcomes in either group.

On the other hand, studies like Saini et al. (2022) [8] and Astin et al. (2005) [5] have shown mixed results regarding the influence of demographic factors. In some of their studies, demographic characteristics were found to play a minor role in predicting psychological outcomes post-intervention, although the results were not always statistically significant. For example, Saini et al. (2022) [12] noted that, in some cases, demographic factors like age might have a subtle influence on the

recovery process from anxiety, though the effects were not large enough to reach significance.

Strengths of the Study

- The use of video-assisted teaching (VAT) represents a modern, engaging, and easily accessible method to educate patients, which could significantly improve their understanding and alleviate anxiety and stress.
- By using a quantitative approach, the study will provide measurable data on the effectiveness of VAT, allowing for statistical analysis that can objectively assess the impact on patient anxiety and stress levels.
- The findings could be applicable across different healthcare settings, particularly in cardiac care units, where patients often experience anxiety and stress prior to procedures like PTCA.
- A quantitative research design provides control over external factors, helping to isolate the effect of video-assisted teaching on anxiety and stress, improving the internal validity of the results.

Limitations of the Study

- The study might have a limited sample size, which could affect the ability to generalize the findings to a larger population or different patient demographics.
- The reliance on self-report questionnaires or scales to assess anxiety and stress may introduce bias or inaccuracies due to patient subjectivity or misunderstanding of the questions.

- The study may focus on immediate or short-term effects, neglecting the long-term impact of VAT on patient anxiety and stress after they have undergone PTCA.
- Other variables, such as the presence of family members or additional psychological interventions, could influence the anxiety levels of patients but might not be fully controlled in the study.

Implications of the Study

- **Improvement in Patient Education**: The study could pave the way for implementing video-assisted teaching as a standard educational tool in cardiac care, helping patients to better understand their condition and procedure.
- **Policy Development:** If the results show significant reductions in anxiety and stress, healthcare institutions may consider incorporating VAT in routine pre-procedure preparations for patients undergoing PTCA.
- **Enhancement of Patient Experience:** By focusing on reducing anxiety and stress, the study can contribute to improving overall patient experience, which is closely linked to better clinical outcomes and satisfaction rates.

Recommendations

- Future studies should involve a larger and more diverse sample to enhance the generalizability of the results.
- Combining VAT with other psychological interventions (e.g., mindfulness training) could be tested to further reduce anxiety and stress levels.

- Future research could employ more objective, multi-method assessments of anxiety and stress, such as physiological measures (e.g., heart rate variability), to complement self-reports.

Conclusion

This study aimed to assess the effectiveness of video-assisted teaching (VAT) in reducing anxiety and stress among patients undergoing PTCA. The findings suggest that VAT can be an effective method to provide education and support to patients, helping them understand the procedure and manage their emotions better. By using videos, patients were able to receive clear and detailed information in a less stressful environment, which contributed to a decrease in anxiety and stress levels.

Although there are some limitations, such as a small sample size and the short-term nature of the study, the results highlight the potential of VAT to improve patient experiences in healthcare settings. Future research with larger groups and long-term follow-ups would be beneficial to confirm these findings and explore how VAT can be integrated into routine clinical practice for better patient care. Overall, this study emphasizes the importance of effective patient education in managing anxiety and stress, paving the way for improvements in healthcare deliver.

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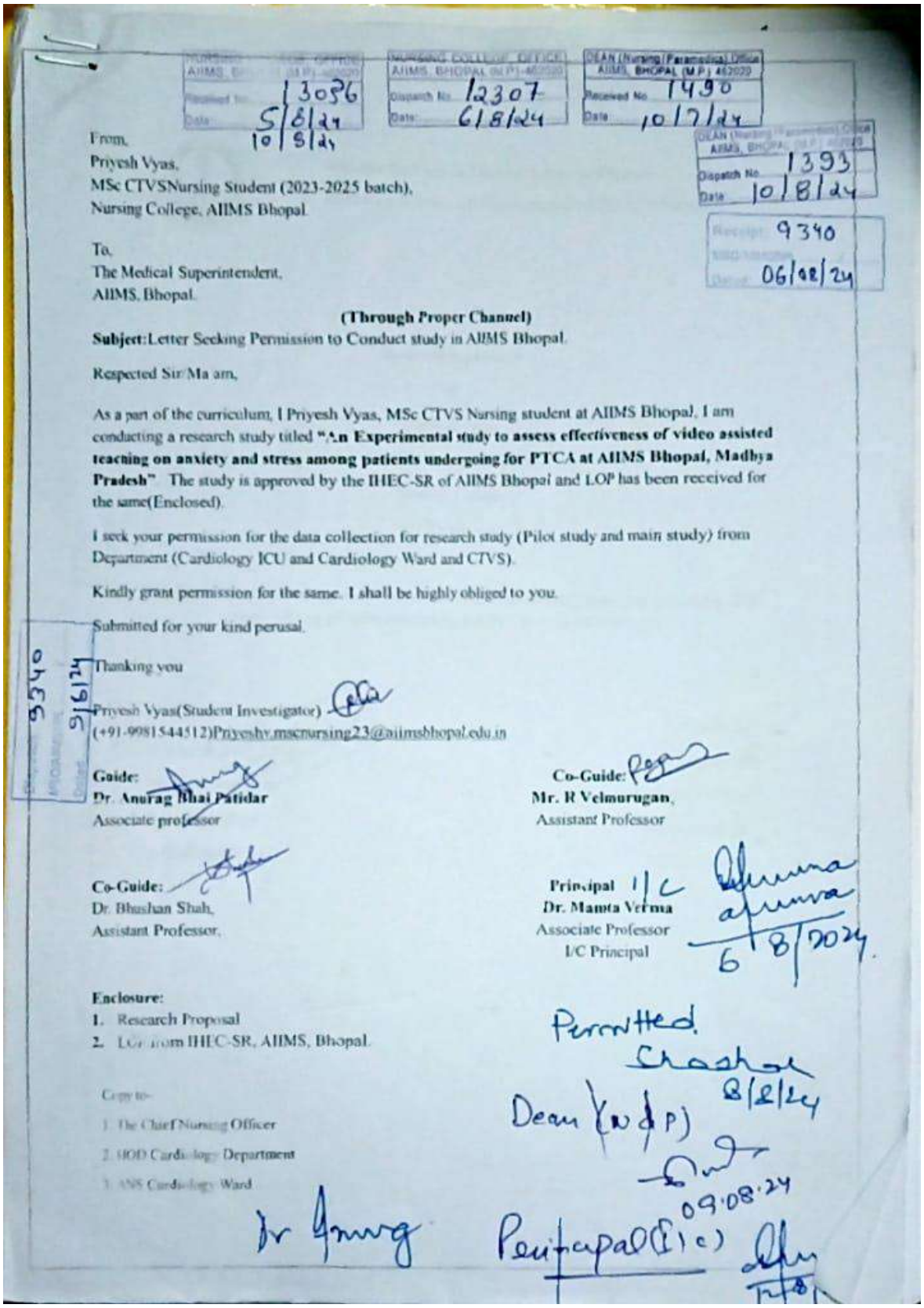
ANNEXURES

Annexure 1

Letter Seeking Permission to Conduct Study



From,
Priyesh Vyas,
MSc CTVSNursing Student (2023-2025 batch),
Nursing College, AIIMS Bhopal.

To,
The Medical Superintendent,
AIIMS, Bhopal.

(Through Proper Channel)

Subject: Letter Seeking Permission to Conduct study in AIIMS Bhopal.

Respected Sir/Ma am,

As a part of the curriculum, I Priyesh Vyas, MSc CTVS Nursing student at AIIMS Bhopal, I am conducting a research study titled **"An Experimental study to assess effectiveness of video assisted teaching on anxiety and stress among patients undergoing for PTCA at AIIMS Bhopal, Madhya Pradesh"** The study is approved by the IHEC-SR of AIIMS Bhopal and LOP has been received for the same(Enclosed).

I seek your permission for the data collection for research study (Pilot study and main study) from Department (Cardiology ICU and Cardiology Ward and CTVS).

Kindly grant permission for the same. I shall be highly obliged to you.

Submitted for your kind perusal.

Thanking you

Priyesh Vyas(Student Investigator)
(+91-9981544512)Priyeshv.mscnursing23@aiimsbhopal.edu.in

Guide:
Dr. Anurag Bhai Patidar
Associate professor

Co-Guide:
Mr. R Velmurugan,
Assistant Professor

Co-Guide:
Dr. Bhushan Shah,
Assistant Professor,

Principal I/C
Dr. Mamta Verma
Associate Professor
I/C Principal

Enclosure:
1. Research Proposal
2. LOP from IHEC-SR, AIIMS, Bhopal.

Copy to-
1. The Chief Nursing Officer
2. HOD Cardiology Department
3. NS Cardiology Ward

Permitted.
8/8/24
Dean (A&P)
09.08.24
Principal (I/c)

Annexure 2

Screening Tool

SECTION A: Screening Tool

Code No _____ **Contact No** _____

Instructions: 1.

- The participants will be reading the questions and responding appropriately,
- All the data collected will be used only for research purpose.
- The confidentiality of all the information collected will be ensured by disclosing the data to investigator, guide and the co-guides only.

1	Is the patient planned for and admitted for elective PTCA?	**Yes** ( ) **No** ( )
2	Is the patient aged between 20-80 years?	**Yes** ( ) **No** ( )
3	Can the patient read and write in Hindi or English?	**Yes** ( ) **No** ( )
4	Has the patient undergone PTCA previously?	**Yes** ( ) **No** ( )
5	Is the patient critically ill?	**Yes** ( ) **No** ( )
6	Is the patient undergoing emergency PTCA?	**Yes** ( ) **No** ( )
7	Does the patient have impaired vision or hearing?	**Yes** ( ) **No** ( )

Interpretation

Note: Items 1 to 3 if yes, will be included in study |

Item 4 to 7 if yes then Excluded from the study |

Annexure 3

Data Collection Tool (English)

Section B: Sociodemographic Variables:

Code No_____ Contact Number: _____

1. Age (in years)
a) 20-34
b) 35-49
c) 50-64
d) 65-80

2. Gender
a) Male
b) Female

3. Educational qualification
a) primary
b) Illitrate
c) Secondary
d) Middle
e) Higher secondary
f) Graduate
g) Postgraduate

4. Occupation
a) Private sector
b) Government sector
c) Business
d) Other .....

5. Type of family-
a) Nuclear
b) Joint

6. Family Annual income (in Rupees) .....

7. Residential Status
a) Rural

b) Urban

8. Marital Status
a) Married
b) Single
c) Widowed

9. Previous knowledge about PTCA
a) Yes
b) No

If yes, source of knowledge_____(Internet, New paper, TV, Radio)

Section – c Clinical variable

Clinical variables:-

1. Do you currently smoke cigarettes or use any other tobacco products?

   No ( ) yes ( )

2. How often do you consume alcohol?

   No ( ) yes ( ) specify frequency ……..……

3. Do you have any pre -existing medical condition?

   No ( ) yes ( ) if yes please specify ……..……..

Section D: Tool for Data Collection:

Part 1: - **PERCEIVED STRESS SCALE**

The questions in this scale ask you about your feelings and thoughts during the last month. In each case, you will be asked to indicate by circling how often you felt or thought a certain way.

Name _____ Date _____

Age _____ Gender (Circle): M F Other _____

0 = Never 1 = Almost Never 2 = Sometimes 3 = Fairly Often 4 = Very Often

1. In the last month, how often have you been upset because of something that happened unexpectedly?	0	1	2	3	4
2. In the last month, how often have you felt that you were unable to control the important things in your life?	0	1	2	3	4
3. In the last month, how often have you felt nervous and "stressed"?	0	1	2	3	4
4. In the last month, how often have you felt confident about your ability to handle your personal problems?	0	1	2	3	4
5. In the last month, how often have you felt that things were going your way?	0	1	2	3	4
6. In the last month, how often have you found that you could not cope with all the things that you had to do?	0	1	2	3	4
7. In the last month, how often have you been able to control irritations in your life?	0	1	2	3	4
8. In the last month, how often have you felt that you were on top of things?	0	1	2	3	4
9. In the last month, how often have you been angered because of things that were outside of your control?	0	1	2	3	4
10. In the last month, how often have you felt difficulties were piling up so high that you could not overcome them.?	0	1	2	3	4

Interpretation for this scale:-

Low stress – 0 - 13

Moderate stress – 14-16

High stress – >27

Part 2: **Zung self-rating anxiety scale**

Name: _____ **Date:** _____

Listed below are 20 statements. Please read each one carefully and decide how much the statement describes.

how you have been feeling during the past week. Circle the appropriate number for each statement.	None or a little of the time	Some of the time	Good part of the time	Most or all of the time
1. I feel more nervous and anxious than usual.	1	2	3	4
2. I feel afraid for no reason at all.	1	2	3	4
3. I get upset easily or feel panicky.	1	2	3	4
4. I feel like I'm falling apart and going to pieces.	1	2	3	4
5. I feel that everything is all right and nothing bad will happen.	4	3	2	1
6. My arms and legs shake and tremble.	1	2	3	4
7. I am bothered by headaches, neck and back pains.	1	2	3	4
8. I feel weak and get tired easily.	1	2	3	4
9. I feel calm and can sit still easily.	4	3	2	1
10. I can feel my heart beating fast.	1	2	3	4
11. I am bothered by dizzy spells.	1	2	3	4
12. I have fainting spells or feel faint.	1	2	3	4
13. I can breathe in and out easily.	4	3	2	1
14. I get feelings of numbness and tingling in my fingers and toes.	1	2	3	4
15. I am bothered by stomachaches or indigestion.	1	2	3	4
16. I have to empty my bladder often.	1	2	3	4
17. My hands are usually dry and warm.	4	3	2	1
18. My face gets hot and blushes.	1	2	3	4
19. I fall asleep easily and get a good night's rest.	4	3	2	1
20. I have nightmares.	1	2	3	4

Interpretation –

Normal range – 20 – 44 **Total Score**.....

Mild to Moderate – 45-59

Moderate to Severe- 60-74

Severe Anxiety - >75

Annexure 4

Data Collection Tool (Hindi)

<u>डेटा संग्रह के लिए उपकरण</u>

निर्देश: कृपया नीचे पूछे गए सभी प्रश्नों के लिए उपयुक्त डेटा पर निशान लगाएं।

कोड संख्या_____ संपर्क नंबर: _____

1. आयु (वर्षों में) _____

ए)20-34

बी) 35-49

ग) 50-64

घ) 65-80

2. लिंग

क) पुरुष

बी) महिला

3. शैक्षिक स्थिति

क) अनपढ़

ब) प्राथमिक

ग) मध्य

घ) माध्यमिक

ई) उच्चतर माध्यमिक

च) स्नातक

छ) स्नातकोत्तर और उससे ऊपर

4. व्यवसाय

ए) निजी क्षेत्र

बी) सरकारी क्षेत्र

ग) व्यवसाय

घ) अन्य (निर्दिष्ट करें)_____

5. परिवार का प्रकार-

ए) एकल परिवार

बी) संयुक्त

6. पारिवारिक वार्षिक आय (रुपये में) _____

7. आवासीय स्थिति

क) ग्रामीण

बी) शहरी

8. वैवाहिक स्थिति

क) विवाहित
बी) सिंगल
ग) विधवा
9. पीटीसीए के बारे में पिछला ज्ञान
क) हाँ
ख) नहीं
यदि हां, तो ज्ञान का स्रोत_____ (इंटरनेट, नया अखबार, टीवी, रेडियो)

क्लिनिकल वेरिएबल्स:

1. क्या आप वर्तमान में सिगरेट पीते हैं या किसी अन्य तंबाकू उत्पाद का उपयोग करते हैं?
   नहीं ( )
   हाँ ( )

2. आप शराब का सेवन कितनी बार करते हैं?
   नहीं ( )
   हाँ ( ) कृपया आवृत्ति निर्दिष्ट करें .....

3. क्या आपको कोई पूर्व-विद्यमान चिकित्सा स्थिति है?
   नहीं ( )
   हाँ ( ) यदि हाँ, कृपया निर्दिष्ट करें .....

अनुमानित तनाव पैमाना

इस पैमाने के प्रश्न आपसे पिछले महीने के दौरान आपकी भावनाओं और विचारों के बारे में पूछते हैं। प्रत्येक मामले में, आपसे यह बताने के लिए कहा जाएगा कि आपने कितनी बार ऐसा महसूस किया या सोचा निश्चित तरीका।

_____ तारीख _____

आयु _____ लिंग (सर्कल): एमएफ अन्य _____

0 = कभी नहीं 1 = लगभग कभी नहीं 2 = कभी-कभी 3 = काफी बार 4 = बहुत बार

1. पिछले महीने में आप कितनी बार किस वजह से परेशान हुए हैं
कुछ ऐसा जो अप्रत्याशित रूप से हुआ? 0 1 2 3 4

2. पिछले महीने में आपको कितनी बार ऐसा महसूस हुआ कि आप असमर्थ हैं
अपने जीवन में महत्वपूर्ण चीज़ों को नियंत्रित करें? 0 1 2 3 4

3. पिछले महीने में, आपने कितनी बार घबराहट और "तनावग्रस्त" महसूस किया है? 0 1 2 3 4

4. पिछले महीने में आपने कितनी बार अपने बारे में आत्मविश्वास महसूस किया है
आपकी व्यक्तिगत समस्याओं को संभालने की क्षमता? 0 1 2 3 4

5. पिछले महीने में आपको कितनी बार लगा कि चीजें ठीक चल रही हैं
आपका रास्ता? 0 1
2 3 4

6. पिछले महीने में आपने कितनी बार पाया है कि आप सामना नहीं कर सके
उन सभी चीजों के साथ जो आपको करना था? 0 1 2 3 4

7. पिछले महीने में आप कितनी बार चिड़चिड़ाहट पर काबू पा सके हैं
अपने जीवन में? 0 1
2 3 4

8. पिछले महीने में आपने कितनी बार महसूस किया है कि आप शीर्ष पर हैं
चीज़ें? 0
1 2 3 4

9. पिछले महीने में आपको कितनी बार किस बात पर गुस्सा आया है
ऐसी चीज़ें जो आपके नियंत्रण से बाहर थीं? 0 1 2 3 4

10. पिछले महीने में आपने कितनी बार महसूस किया है कि मुश्किलें बढ़ती जा रही हैं इतने ऊँचे कि तुम उन पर विजय न पा सके? 0 1 2 3 4

Score.....

विवेचना:

- **कम तनाव** – 0 - 13
- **मध्यम तनाव** – 14 - 16
- **उच्च तनाव** – 17 और उससे ऊपर

ज़ुंग सेल्फ रेटिंग चिंता स्केल

..... तारीख-.....

नीचे 20 कथन सूचीबद्ध हैं। कृपया प्रत्येक को ध्यान से पढ़ें और निर्णय लें कि कथन कितना वर्णन करता है

आप पिछले सप्ताह के दौरान कैसा महसूस कर रहे हैं।

प्रत्येक कथन के लिए उपयुक्त संख्या पर गोला लगाएँ। समय का कोई भी नहीं या थोड़ा सा कुछ समय का अच्छा भाग अधिकांश या सभी समय का

1. मैं सामान्य से अधिक घबराहट और चिंता महसूस करता हूं। 1 2 3 4
2. मुझे बिना किसी कारण के डर लगता है। 1 2 3 4
3. मैं जल्दी परेशान हो जाता हूं या घबरा जाता हूं। 1 2 3 4
4. मुझे ऐसा लग रहा है जैसे मैं टूट रहा हूं और टुकड़े-टुकड़े हो रहा हूं। 1 2 3 4
5. मुझे लगता है कि सब कुछ ठीक है और कुछ भी बुरा नहीं होगा. 4 3 2 1
6. मेरे हाथ और पैर हिलते और कांपते हैं। 1 2 3 4
7. मैं सिरदर्द, गर्दन और पीठ दर्द से परेशान हूं। 1 2 3 4
8. मैं कमज़ोर महसूस करता हूँ और जल्दी थक जाता हूँ। 1 2 3 4
9. मैं शांत महसूस करता हूं और आसानी से स्थिर बैठ सकता हूं। 4 3 2 1
10. मैं महसूस कर सकता हूं कि मेरा दिल तेजी से धड़क रहा है। 1 2 3 4
11. मैं चक्कर आने से परेशान हूं. 1 2 3 4
12. मुझे बेहोशी आ जाती है या बेहोशी महसूस होती है। 1 2 3 4
13. मैं आसानी से सांस अंदर और बाहर ले सकता हूं। 4 3 2 1
14. मुझे अपनी उंगलियों और पैर की उंगलियों में सुन्नता और झुनझुनी महसूस होती है। 1 2 3 4
15. मैं पेट दर्द या बदहजमी से परेशान हूं. 1 2 3 4
16. मुझे अक्सर अपना मूत्राशय खाली करना पड़ता है। 1 2 3 4
17. मेरे हाथ आमतौर पर सूखे और गर्म रहते हैं। 4 3 2 1
18. मेरा चेहरा गर्म हो जाता है और लाल हो जाता है। 1 2 3 4

19. मुझे आसानी से नींद आ जाती है और रात को अच्छा आराम मिलता है। 4 3 2 1

20. मुझे बुरे सपने आते हैं. 1 2 3 4

कुल स्कोर-.....

व्याख्या -

सामान्य सीमा – 20 – 44

हल्की से मध्यम चिंता – 45-59

मध्यम से गंभीर चिंता – 60-74

गंभीर चिंता – >75

कुल स्कोर-.....

Annexure 5

Blueprint of the Content of the Intervention

Meaning of Coronary Angioplasty:

Coronary angioplasty, also known as percutaneous transluminal coronary angioplasty (PTCA), is a medical procedure used to treat disease of the coronary arteries. Coronary angioplasty is a procedure commonly used to open a blocked or narrowed coronary artery. When the arteries supplying blood to the heart get blocked due to the formation of cholesterol, calcium and other substances. This blockage restricts blood flow to the heart muscle, causing symptoms such as chest pain (angina) or shortness of breath. In coronary angioplasty, a stent (small metal mesh tube coated with medicine) is inserted with the help of a catheter. It is inserted into the artery with a balloon at the end. The balloon is inflated to widen the artery and dislodge the plaque blocking the artery, thereby restoring blood flow. This process may take 30 minutes to 2 hours. Through this video we will try to tell you in detail about coronary angioplasty.

Purposes of Coronary Angioplasty: -

It is used in the following ways:

1. To improve the blood flow of the heart.
2. To increase the functioning of the heart.
3. To reduce the symptoms of angina.
4. To reduce the risk of heart attack.
5. Improving breathing.
6. Reducing the risks associated with heart disease.
7. Reducing blood pressure.
8. Maintaining heart function and health.

Preparations before Angioplasty:-

Preparations before Angioplasty:-

Several types of preparations are done before PTCA procedure, which are as follows:

1. The patient's medical records are reviewed, including past and present medical history, and lab tests.

2.If you are taking any type of blood thinning medications, have your doctor stop all medications before angioplasty. tell it to

3. Discuss with your doctor about what to expect during and after the procedure. Understand the potential risks and benefits, including any alternative treatments.

4. If you are allergic to any medicine or have any kind of illness, please inform your doctor.

5. Before angioplasty you have to remain without eating anything for 4-6 hours.

6. During the procedure, a dye coated with medicine is inserted into the patient's artery, which may sometimes make the patient feel unwell. The patient should not panic because of this, it is normal and the doctor present there should be informed. 7. If the patient is taking diabetes medicines (such as metformin) then it has to be stopped 24 hours before the procedure, then inform the doctor present there about it.

8. If you have ever had paralysis or stroke attack within 1 year, inform the doctor.

9. If you have had any kind of kidney problem in the past, tell your doctor.

And the most important tests:

This adjusts which tests the patient will undergo before PTCA, such as ECG, echocardiography (echo), and observational angiography of the artery.

Now we turn to the most important of these tests, angiography.

Coronary angiography is a special type of test which plays an important role in the diagnosis and treatment of heart diseases. In this procedure, a catheter is inserted into the patient's artery, after which a special dye (drawing drug) is injected. This dye helps create images of the arteries, allowing the doctor to analyze the condition of the arteries. Through this procedure, the doctor observes the patient's heart condition and recommends necessary treatment. Coronary angiography is usually performed during heart catheterization, which is a highly technical procedure and can be performed in a hospital.

Procedure Description –

Coronary angiography is a diagnostic procedure. Which is used to detect blockages in the coronary arteries that supply blood to the heart muscle. This is done by inserting a fine needle into the radial (arm) artery or femoral (thigh) artery after giving local anesthesia. A very narrow, flexible plastic tube called a catheter is guided into the heart through an artery in the arm or thigh to examine the coronary arteries under X-ray imaging guidance. A special contrast medium (dye) that shows up on X-rays is injected into each of the coronary arteries and a series of video images are recorded. This allows any blockage or narrowing to be seen that may be responsible for the symptoms. Further treatment plan i.e. angioplasty with stenting or coronary artery bypass grafting (CABG) or medical treatment is best decided based on video images. Accurate assessment of coronary artery health, identification of any blockages to determine the most appropriate treatment plan. Helps

Risks - Coronary angiography is generally considered safe but there are some risks associated with this procedure, some of the followings are the risks and complications: -

1 Bleeding or turning blue at the puncture site. This is usually stopped by applying pressure on the puncture site. In some cases, blood transfusion may be required.

2. Pain or discomfort at the puncture site. Medicine may be required for this.

3. Infection at the catheter insertion site may require antibiotics and further treatment.

4. Allergic reactions to contest dye, which can be serious in rare cases.

5. Damage to an artery in the leg or arm may require further treatment. Emergency stenting or operation 0.1% in every 1000 patients.

6. Contrast-induced kidney failure, especially in patients with weakened kidneys (kidney loss).

This was all the information about Angiography.

Now we continue again about Angioplasty:-

Procedure of Coronary Angioplasty:-

Coronary Angioplasty, also known as Percutaneous Transluminal Coronary Angioplasty (PTCA), is a medical procedure that is used to widen narrowed or blocked coronary arteries. A part of the artery in the wrist or thigh is numbed using local anesthesia. Next, the vein is punctured with a needle. A tube or catheter is inserted into the artery and then guided into the affected coronary artery under X-ray imaging guidance. A small wire is then passed through the

coronary artery. So that a catheter with its balloon can be inserted over the wire into the narrowed or blocked part of the coronary artery. The balloon is then inflated with fluid to press down the plaque deposited in the artery walls, which will improve blood flow . Even after inflating the balloon, contractions may reoccur or the blockage may return. So a stent is a small mesh metal tube that is attached to a balloon so that it can be expanded into the coronary artery. The balloon is then removed and the stent remains. In some circumstances, a coronary atherectomy may be performed, in which a catheter is placed in the artery, and the blockage is removed using a cutting instrument. In some cases, a pacing wire or pressure monitoring catheter may be inserted into a large vein before starting the procedure. Medicines are given before and during the procedure to reduce the risk of blood clots and blockage of the stent. Dual antiplatelet medications are prescribed for up to a year. In some cases where the risk of a blood clot is high, special medication may be given to dissolve the clot.

The primary benefits of coronary angioplasty procedures include potentially improving blood flow to the heart muscle, relieving chest pain symptoms, or at least reducing the frequency and severity of attacks (with medication), and reducing the risk of heart attack. Is included.

Risks and Complications of Angioplasty: Coronary angioplasty procedures may carry some risks and potential complications, which include:

1. Major bleeding, bruising, and hematoma (a lump of blood beneath the skin) associated with puncture of an artery in the arm or groin 1% may require additional medical or surgical treatment or blood transfusion.
2. Damage to the radial (wrist) 2.5% or femoral (groin) artery (0.5%), causing bleeding or blockage of the artery. An operation is usually required to repair the damage. Very rarely, loss of limb may occur due to lack of blood supply.
3. Pseudo aneurysm An artery in the thigh or wrist can sometimes become damaged due to the catheter and bleed into the surrounding tissue. This is called a pseudo aneurysm. If this happens, you may need an operation to repair it, which can be This means that you may have to stay in the hospital for a few more days.
4. There is a very low chance of infection in the area of the wrist or thigh where the catheter is inserted. (1 in every 500 patient)
5. Vasovagal attacks (fainting) are caused by a drop in blood pressure and heart rate, and affect the heart (1 in every 100people). Feeling faint is treated by lowering the head of the bed, or raising your legs, and giving medications and intravenous fluids. Goes |
6. Heart rhythm disturbances may develop during or after the procedure, affecting about 1 in 100 people. If treatment is required, an electric shock is given to the heart. Usually restores its normal rhythm.

7. Coronary artery damage affects at least one of the following: The artery damage is treated by emergency surgery by inserting an additional stent or using another vein or artery as a bypass to redirect blood into the blocked artery. This is called a coronary artery bypass operation.
8. A medical catheter or wire in a coronary artery or heart chamber can cause a small hole in the coronary arteries or chambers of the heart. This happens among people. This may cause blood to collect around the heart. This may require draining the blood and closing the hole using a small tube inserted under the chest bone or through open heart surgery.
9. Allergic reaction (1%) caused by contrast dye or other medications used during the procedure. It requires medical treatment and if severe, endotracheal intubation and ventilation may be required.
10. Fewer people are at risk of stroke (paralysis)(1 in 100 pt.) as a result of angioplasty.
11. Death(0.5-0.7%) during angioplasty as a result of heart conditions or other complications.
12. Burning or damage to the skin due to exposure to X-rays.

Care after angioplasty?

A patient who has undergone angioplasty needs to stay in the hospital for 1 or 2 days.

Post Angioplasty care is very important so that the patient can recover quickly and lead a healthy life again. Here are some important instructions for proper care after angioplasty:

1. Stay in touch with your doctor: You should stay in touch with your doctor and follow his advice. They will give you the necessary instructions to stay fit and healthy.

2. Adhere to medications: You must completely follow the medications prescribed by your doctor. This will help ensure the health of your heart.

3. Healthy Diet: Eating a healthy diet is very important. You should include appropriate amounts of fruits, vegetables, grains, proteins, and green leaves. Oily, sweet, fried and excessively spicy foods should be avoided.

4. Regular exercise: It is necessary to do regular exercise as per the doctor's advice. This will help maintain your heart health.

5. Give up smoking and alcohol: Smoking and consuming alcohol is harmful, so do not do it at all.

6. Maintain a healthy weight: Carrying excess weight can be harmful for heart disease. Therefore, follow the right diet and exercise to maintain a healthy weight.

7. Regular medical checkups: You should visit your doctor regularly so that he can monitor your health and identify any potential problems.

8. Take care of mental health: Mental health should also be given importance. Be mindful to avoid stress, anxiety and fluctuations.

9. If there is swelling and pain at the site of catheter insertion or fever, weakness, infection, chest pain and difficulty in breathing, contact your doctor immediately. Do it.

10. If you have a bleeding problem from anywhere in the body, contact the doctor immediately.

11. If you start having difficulty breathing or heart pain like before after going home, then contact your doctor immediately.

By following these simple instructions, you can ensure the health of your heart and have a healthy and active heart after angioplasty. Can live life. If any problem occurs, contact your doctor immediately.

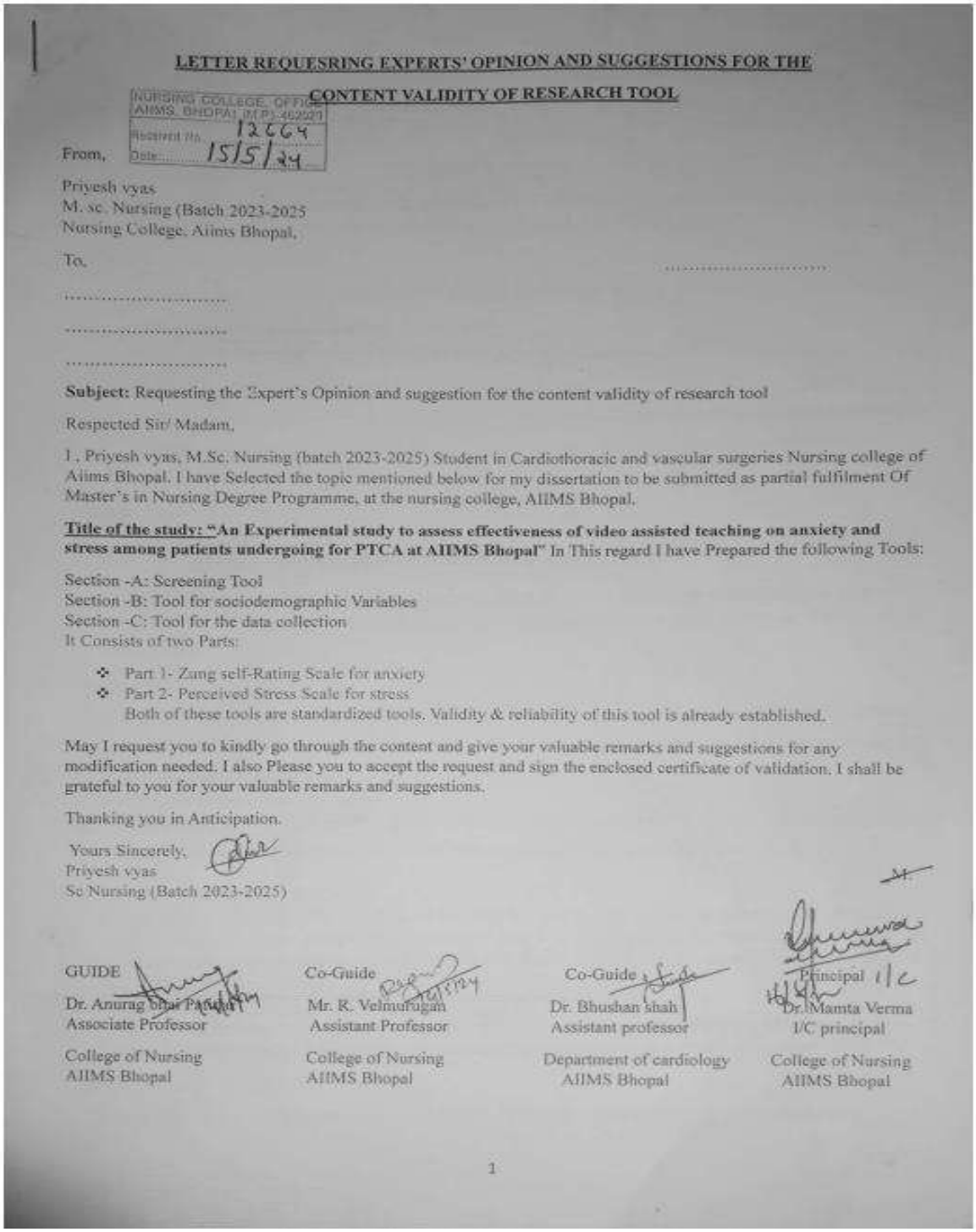
Annexure 6

List of Experts for Content Validation of Tool & Intervention

SLNO	NAMEOFEXPERT	DESIGNATION&INSTITUTE
1	Mrs. Ranjana Verma	Assistant Professor, AIIMS Bhopal
2	Mr. Kumarasamy A P	Assistant Professor, AIIMS Bhopal
3	Prof. C.Vasantha Kalyani	Principal , AIIMS Deoghar
4	Dr. Shiv Kumar Mudgal	Associate Professor, AIIMS Deoghar
5	Mrs. Sibi Riju	Associate Professor, AIIMS New Delhi
6	Mr. Vipin Patidar	Tutor/clinical Instructor, AIIMS Deoghar
7	Mr. Pankaj Kumar	Assistant Professor, BGHI , Indore
8	Mr. Sarvesh Dhakar	Assistant Nursing Superintendent, AIIMS Bhopal
9	Mr. Kanhaiya Lal Rathore	Assistant Nursing Superintendent, AIIMS Bhopal

Annexure 7

Letter seeking permission for tool & intervention validation



LETTER REQUESRING EXPERTS' OPINION AND SUGGESTIONS FOR THE CONTENT VALIDITY OF RESEARCH TOOL

NURSING COLLEGE OFFICE AIIMS, BHOPAL (M.P.)-462021
Received no. 1266
Date 15/5/24

From,

Priyesh vyas
M. sc. Nursing (Batch 2023-2025
Nursing College, Aiims Bhopal,

To,

.....

.....

.....

.....

Subject: Requesting the Expert's Opinion and suggestion for the content validity of research tool

Respected Sir/ Madam,

I , Priyesh vyas, M.Sc. Nursing (batch 2023-2025) Student in Cardiothoracic and vascular surgeries Nursing college of Aiims Bhopal. I have Selected the topic mentioned below for my dissertation to be submitted as partial fulfilment Of Master's in Nursing Degree Programme, at the nursing college, AIIMS Bhopal.

Title of the study: "An Experimental study to assess effectiveness of video assisted teaching on anxiety and stress among patients undergoing for PTCA at AIIMS Bhopal" In This regard I have Prepared the following Tools:

Section -A: Screening Tool
Section -B: Tool for sociodemographic Variables
Section -C: Tool for the data collection
It Consists of two Parts:

- Part 1- Zung self-Rating Scale for anxiety
- Part 2- Perceived Stress Scale for stress

Both of these tools are standardized tools. Validity & reliability of this tool is already established.

May I request you to kindly go through the content and give your valuable remarks and suggestions for any modification needed. I also Please you to accept the request and sign the enclosed certificate of validation. I shall be grateful to you for your valuable remarks and suggestions.

Thanking you in Anticipation.

Yours Sincerely,
Priyesh vyas
Sc Nursing (Batch 2023-2025)

GUIDE	Co-Guide	Co-Guide	Principal I/c
Dr. Anurag bhai Pandey	Mr. R. Velmurugan	Dr. Bhushan shah	Dr. Mamta Verma
Associate Professor	Assistant Professor	Assistant professor	I/C principal
College of Nursing AIIMS Bhopal	College of Nursing AIIMS Bhopal	Department of cardiology AIIMS Bhopal	College of Nursing AIIMS Bhopal

1

Annexure 8

Criteria Checklist for Validation of Tool

CRITERIA CHECKLIST FOR THE VALIDATION OF THE TOOL

Part-B Tool for Demographic Data Collection

S. No.	Item Number	Highly Relevant 4	Quite Relevant 3	Somewhat Relevant 2	Not Relevant 1	Remarks
1.	Age in years (A) 20-34 (B) 35-49 (C) 50-64 (D) 65-80					
2.	Gender (A)Male (B) Female					
3.	Educational qualification (A) Illiterate (B)primary (C)secondary (D)higher secondary (E)Graduate (F)Postgraduate					
4.	Occupation (A)Private sector (B)Government sector (c)Business (d)other……					
5.	Type of family- (A)Nuclear (B)Joint					
6.	Family Annual income (in Rupees) _____					
7.	Residential Status (A)Rural (B)Urban					
8.	Marital Status (A) Married (B)Single (C)Widowed					
9.	Previous knowledge about PTCA (A)yes (B)No If yes, source of knowledge……					

Part -C

Clinical Variables

S. No.	Item Number	Highly Relevant 4	Quite Relevant 3	Somewhat Relevant 2	Not Relevant 1	Remarks
1.	Do you currently smoke cigarettes or tobacco products? Yes ( ) No ( )					
2.	How often do you consume alcohol? Yes ( )…… No ( )					
3.	Do you have any pre-existing medical condition? No ( ) Yes ( ) ……..					

Annexure 9

Format of Content Validity Certificate of Tool

Certificate of validation(Tool Validation)

This is to certify that the tool prepared by Priyesh vyas, M.Sc. Nursing 2023 batch student, Nursing college, AIIMS Bhopal, to be used in her study titled **"An Experimental study to assess effectiveness of video assisted teaching on anxiety and stress among patients undergoing for PTCA at AIIMS Bhopal"** has been validated by me and is found to be **valid/ not valid.**

Overall Remark-

Signature:

Name of the expert:

Designation:

Name of the Institution:

Official seal:

Date:

Place:

Annexure 10

Format of Content Validity Certificate of Intervention

CERTIFICATE OF VALIDATION (INTERVENTION)

This is to certify that the video intervention constructed by Priyesh Vyas, M.Sc. Nursing 2023 batch student, Nursing college, AIIMS Bhopal, to be used in his study titled "**An Experimental study to assess effectiveness of video assisted teaching on anxiety and stress among patients undergoing for PTCA at AIIMS Bhopal,** Madhya Pradesh" has been validated by me and is found to be valid/ not valid.

Overall Remark-

Signature: ……..

Name of the expert: ……..

Designation: ……..

Name of the Institution: ……..

Official seal:

Date: ……..

Place: ……..

Annexure 11

Content Validity Index of Tool

Sociodemographic Variables

ITEM	NO: OF RESPONSES WITH 3 AND 4	I-CVI	INTERPRETATION
Item No. 1	9	1	Acceptable
Item No. 2	9	1	Acceptable
Item No. 3	9	1	Acceptable
Item No. 4	9	1	Acceptable
Item No. 5	9	1	Acceptable
Item No. 6	9	1	Acceptable
Item No. 7	9	1	Acceptable
Item No. 8	9	1	Acceptable
Item No. 9	9	1	Acceptable

S-CVI : 9/9 = 1 (Acceptable)

Clinical Variables

ITEM	NO: OF RESPONSES WITH 3 AND 4	I-CVI	INTERPRETATION
Item No. 1	**9**	**1**	**Acceptable**
Item No. 2	**9**	**1**	**Acceptable**
Item No. 3	**9**	**1**	**Acceptable**

S-CVI : 3/3 = 1 (Acceptable)

Annexure 12

Certificate for Language Validation of Tool

Pain

CERTIFICATE OF TRANSLATION (TOOL)

TO WHOM IT MAY CONCERN

This is to certify that Priyesh Vyas, M.Sc. Nursing 2023 batch student Nursing college, AIIMS Bhopal is conducting research on the topic "**An Experimental study to assess effectiveness of video assisted teaching on anxiety and stress among patients undergoing for PTCA at AIIMS Bhopal**". The Hindi version of the lesson content for the educational video on Percutaneous Transluminal Coronary Angioplasty (PTCA) patients is a true & accurate translation of the English version and is valid to be used for research.

Overall Remark-

Seal & Signature: ..... 07/08/2024 (डॉ. अन्दलाल)

विभागाध्यक्ष
तुलनात्मक भाषा एवं संस्कृति विभाग
बरकतउल्ला विश्वविद्यालय, भोपाल

Name of the language expert: डॉ. अन्दलाल

Designation: सह प्राध्यापक

Name of the Institution: बरकतउल्ला विश्वविद्यालय, भोपाल

Date: 07-08-2024

Place: भोपाल

Annexure 13

Certificate for Language Validation of Intervention

CERTIFICATE OF TRANSLATION (Lesson Content of the Intervention)

TO WHOM IT MAY CONCERN

This is to certify that Priyesh Vyas, M.Sc. Nursing 2023 batch student, Nursing college, AIIMS Bhopal is conducting research on the topic "**An Experimental study to assess effectiveness of video assisted teaching on anxiety and stress among patients undergoing for PTCA at AIIMS Bhopal**". The Hindi version of the lesson content for the educational video on Percutaneous Transluminal Coronary Angioplasty (PTCA) patients is a true & accurate translation of the English version and is valid to be used for research.

Overall Remark-

Seal & Signature: .....

विभागाध्यक्ष
हिन्दी भाषा एवं संस्कृति विभाग
बरकतउल्ला विश्वविद्यालय, भोपाल

Name of the language expert: .....

Designation: .....

Name of the Institution: .....

Date: 07-08-2024

Place: .....

Annexure 14

Participant Information Sheet (English)

PARTICIPANT INFORMATION SHEET

Date: 16/01/2024

Title of the Study

"An Experimental study to assess effectiveness of video assisted teaching on anxiety and stress among patients undergoing for PTCA at AIIMS Bhopal."

Student Investigator: Mr. Priyesh vyas M.Sc. Nursing Student (2023-2025)

Guide: - Dr. Anurag Bhai Patidar, Associate Professor Nursing College, AIIMS Bhopal

Co-Guide: - Mr. R. Velmurugan, Assistant Professor, Nursing College, AIIMS Bhopal

Introduction: - PTCA is a choice of treatment for those who have coronary artery disease. This research study aims to assess effectiveness of video assisted teaching on anxiety and stress among patients undergoing for PTCA at AIIMS Bhopal".

Participation – what is included?

a. **Do I have to take part?**
   Participation in this research is entirely voluntary. A decision to not take part, or withdraw at any time, will not affect your right or medical care in any way.

b. **What is expected of me if I join?**
   If you agree to participate, you will sign the informed consent. You will be asked a few information about your socio-demographic data (such as Age, Gender, educational qualification, occupation, etc.). You may provide the relevant details asked.

c. **How long will my participation in the study last?**
   The duration of the participation lasts for 10-15 minutes.

d. **Do I have to come for extra visits or undergo extra investigation for the study?**
   NO.

e. **What are the possible benefits in taking part?**
   Free education and demonstration of Video intervention will help to reduce your stress and anxiety.

f. **What are the possible disadvantages and risks of taking part?**
   There are no major foreseeable disadvantages or risk because of the study.

g. **What happens to the information collected about me?**
   All information collected will be kept strictly confidential. Not share with anyone. Result from the study will be reported as group data and will not identify you in any way.

h. **What happens if I change my mind about participating in this study?**
   You are entitled to change your mind and withdraw at any time during the study without any

disadvantage or penalty.

I. Whom should I contact for more information regarding this or if I have any question/doubts in my mind later?

If you want any information, you can contact

Mr. Priyesh vyas
Post graduate student.
Nursing College,
AIIMS Bhopal
Ph: 9057826784
Email:
PRIYESHV.mscnursing23@aiimsbhopal.edu.in

Dr. Ankur Joshi
Member Secretary,
Institution Human Ethics
Committee Student Research
Ph: 8818899050,
Email:
ihecpgr@aiimsbhopal.edu.in

Annexure 15

Participant Information Sheet (Hindi)

प्रतिभागी सूचना पत्रक

दिनांक: 16/01/2024

1. अध्ययन का शीर्षक

एम्स भोपाल में पीटीसीए के दौर से गुजर रहे मरीजों के बीच चिंता और तनाव पर वीडियो सहायता प्राप्त शिक्षण की प्रभावशीलता का आकलन करने के लिए एक प्रायोगिक अध्ययन।

1. **छात्र अन्वेषक:** श्री **प्रियेश व्यास** एम.एससी नर्सिंग छात्र (2023-2025)
2. **मार्गदर्शक:-** **डॉ. अनुराग भाई पाटीदार**, सहायक प्राध्यापक, नर्सिंग कॉलेज, एम्स भोपाल
3. **सह- मार्गदर्शक: श्री आर. वेलमुरुगन**, सहायक प्राध्यापक, नर्सिंग कॉलेज, एम्स भोपाल
4. **सह- मार्गदर्शक: डॉ भूषण शाह**, सहायक प्राध्यापक, कार्डियोलॉजी विभाग, एम्स भोपाल

परिचय: - शोध अध्ययन का उद्देश्य "एम्स भोपाल में पीटीसीए से गुजरने वाले रोगियों के बीच चिंता और तनाव पर वीडियो सहायता प्राप्त शिक्षण का आकलन करने के लिए एक प्रायोगिक अध्ययन" है। इस अध्ययन का उद्देश्य पीटीसीए प्रक्रिया से गुजरने वाले रोगियों पर वीडियो सहायता शिक्षण के प्रभाव को निर्धारित करना है।

अध्ययन का उद्देश्य: इस अध्ययन का उद्देश्य एम्स भोपाल में पीटीसीए के दौर से गुजर रहे मरीजों के बीच चिंता और तनाव पर वीडियो सहायता प्राप्त शिक्षण का आकलन करना है

5. भागीदारी - क्या शामिल है?

I. **क्या मुझे भाग लेना है?**

इस शोध में भागीदारी पूरी तरह से स्वैच्छिक है। भाग न लेने या किसी भी समय वापस लेने का निर्णय किसी भी तरह से आपके अधिकार या चिकित्सा देखभाल को प्रभावित नहीं करेगा।

II. **अगर मैं शामिल हो जाऊं तो मुझसे क्या उम्मीद की जाती है?**

यदि आप भाग लेने के लिए सहमत हैं, तो आप सूचित सहमति पर हस्ताक्षर करेंगे। आपसे आपके सामाजिक-जनसांख्यिकीय डेटा (जैसे आयु, लिंग, शैक्षिक योग्यता, व्यवसाय, बीएमआई, आदि) के बारे में कुछ जानकारी मांगी जाएगी। आप पूछे गए प्रासंगिक विवरण प्रदान कर सकते हैं **अध्ययन में मेरी भागीदारी कब तक चलेगी?**

भागीदारी की अवधि 5-10 मिनट तक रहती है

III. **क्या मुझे अध्ययन के लिए अतिरिक्त मुलाकातों या अतिरिक्त जांच के लिए आना होगा?**

नहीं।

IV. भाग लेने के संभावित लाभ क्या हैं?

सांस लेने में तकलीफ को कम करने के लिए आपको नि:शुल्क शिक्षा और सांस लेने के व्यायाम का प्रदर्शन दिया जाता है।

V. भाग लेने के संभावित नुकसान और जोखिम क्या हैं?

अध्ययन के कारण कोई बड़ा पूर्वाभास योग्य नुकसान या जोखिम नहीं है।

VI. मेरे बारे में एकत्र की गई जानकारी का क्या होता है?

एकत्र की गई सभी सूचनाओं को कड़ाई से गोपनीय रखा जाएगा। किसी से शेयर नहीं करते। अध्ययन के परिणाम समूह डेटा के रूप में रिपोर्ट किए जाएंगे और किसी भी तरह से आपकी पहचान नहीं करेंगे।

VII. यदि मैं इस अध्ययन में भाग लेने के बारे में अपना विचार बदल दूं तो क्या होगा?

आप अपना विचार बदलने और अध्ययन के दौरान किसी भी समय बिना किसी नुकसान या दंड के वापस लेने के हकदार हैं।

इस बारे में अधिक जानकारी के लिए या बाद में मेरे मन में कोई प्रश्न/शंका होने पर मुझे किससे संपर्क करना चाहिए?

कोई जानकारी चाहिए तो संपर्क कर सकते हैं

श्री **प्रियेश व्यास**
स्नातकोत्तर विद्यार्थी
नर्सिंग कॉलेज,
एम्स भोपाल
फोन: 9057826784
ईमेल: PRIYESHV.mscnursing23@aiimsbhopal.edu.in

डॉ.अंकुर जोशी
सदस्य सचिव,
इंस्टीट्यूशन ह्यूमन एथिक्स कमेटी
स्टूडेंट रिसर्च
फ़ोन: -8818899050
ईमेल: ihecpgr@aiimsbhopal.edu.in

Annexure 16

Informed Consent (English & Hindi)

Informed consent form

Patient's copy

Title **"An Experimental study to assess effectiveness of video assisted teaching on anxiety and stress among patients undergoing for PTCA at AIIMS Bhopal"**

I have been fully informed of the above study as per the patient's information sheet. I understand that there is no major risk associated with this study. I hereby agree that I am willing to participate in the study. I also agree to allow researcher to take photographs of the researchers doing the study. I furthermore recognize the fact that I am free to withdraw this consent and to discontinue participation in this project at any time without prejudice to the treatment.

Investigator's name:

Investigator's signature:

Patient's name:

Patient's signature:

Date:

सूचित सहमति प्रपत्र

रोगी की प्रति

शीर्षक: एम्स भोपाल में पीटीसीए के दौर से गुजर रहे मरीजों के बीच चिंता और तनाव पर वीडियो सहायता प्राप्त शिक्षण की प्रभावशीलता का आकलन करने के लिए एक प्रायोगिक अध्ययन.

रोगी के सूचना पत्रक के अनुसार मुझे उपरोक्त अध्ययन के बारे में पूरी जानकारी दी गई है। मैं समझता हूं कि इस अध्ययन से जुड़ा कोई बड़ा जोखिम नहीं है। मैं इस बात से सहमत हूं कि मैं अध्ययन में भाग लेने के लिए तैयार हूं। मैं शोधकर्ता को अध्ययन कर रहे शोधकर्ताओं की तस्वीरें लेने की अनुमति देने के लिए भी सहमत हूं। इसके अलावा मैं इस तथ्य को स्वीकार करता हूं कि मैं इस सहमति को वापस लेने और उपचार के प्रति पूर्वाग्रह के बिना किसी भी समय इस परियोजना में भागीदारी बंद करने के लिए स्वतंत्र हूं।

अन्वेषक का नाम:

अन्वेषक के हस्ताक्षर:

मरीज का नाम:

रोगी के हस्ताक्षर:

तारीख:

Master sheet of socio-demographics and clinical variables

CODENO	GROUP	AGE	GENDER	EDU	OCCU.	FAMILY	INCOME	RESD.STATUS	MARITAL	PRE.KNOW.	CV1	CV2	CV3
2	1	2	1	7	3	1	3	2	1	2	1	1	1
4	1	3	1	3	1	2	2	2	1	2	2	2	1
6	1	3	2	4	4	2	2	1	1	2	2	1	1
8	1	2	2	6	1	1	3	2	1	2	1	2	1
10	1	2	1	1	4	1	2	1	1	2	2	1	1
12	1	2	1	3	4	1	2	1	1	1	1	1	2
14	1	2	1	1	4	2	2	1	1	2	1	2	1
16	1	3	1	4	4	1	2	2	1	2	1	1	1
18	1	2	1	4	4	1	1	1	1	2	2	2	1
20	1	3	2	1	4	1	2	1	1	2	2	1	1
22	1	2	2	1	1	1	2	1	1	2	1	1	1
24	1	1	2	6	1	1	3	1	1	2	1	1	1
26	1	2	2	1	4	1	2	1	1	2	1	1	1
28	1	3	1	5	1	1	2	1	1	2	2	1	1
30	1	2	2	4	4	2	2	1	1	2	2	2	1
32	1	3	1	1	1	1	2	1	1	2	2	2	1
34	1	2	2	3	1	1	2	1	1	2	1	1	1
36	1	1	1	6	2	1	3	2	2	2	2	2	1
38	1	2	2	3	1	1	3	1	1	2	1	1	1
40	1	3	1	3	4	2	2	1	1	2	2	2	1
1	0	2	2	2	4	2	2	2	1	2	1	1	2
3	0	2	1	3	1	1	3	1	1	2	1	1	1
5	0	3	1	2	4	1	2	1	1	2	2	1	1
7	0	2	1	1	1	1	2	1	1	2	1	1	1
9	0	2	1	2	4	1	2	1	1	2	2	1	1
11	0	2	1	4	2	2	3	1	1	2	2	1	1
13	0	2	2	3	1	2	3	2	1	2	1	1	1
15	0	3	2	2	1	2	2	1	1	2	1	1	1
17	0	3	2	6	1	1	3	2	1	2	1	1	1
19	0	2	2	4	4	1	2	1	1	2	1	1	1
21	0	1	1	1	1	1	2	2	2	2	1	2	1
23	0	2	1	3	4	2	2	1	1	2	2	2	1

25	0	3	1	5	4	1	2	1	1	2	2	2	1
27	0	2	1	1	3	1	3	1	1	2	2	1	1
29	0	2	1	1	1	2	3	1	1	2	2	1	1
31	0	3	2	2	4	2	2	1	1	2	2	1	1
33	0	3	2	4	4	2	2	1	1	2	1	1	1
35	0	2	1	3	1	1	3	1	1	2	2	2	1
37	0	2	1	3	4	1	2	1	1	2	2	2	1
39	0	3	2	1	1	2	2	1	1	2	1	1	1

Master sheet of stress and anxiety

CODENO	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	A1	A2	A3	A4	A5	A6	A7	A8	A9	A10	A11	A12	A13	A14	A15	A16	A17	A18	A19	A20
2	3	4	1	1	0	3	2	2	1	2	4	3	2	3	3	3	2	2	1	4	3	3	1	1	2	2	2	1	2	1
4	3	2	2	3	4	2	1	3	2	3	3	4	2	3	2	1	4	3	3	3	2	4	3	3	4	3	2	1	1	1
6	2	1	1	3	2	2	3	3	3	2	2	2	3	2	3	3	4	2	4	2	2	3	4	2	3	2	3	3	4	1
8	2	2	2	4	3	1	4	2	1	1	3	4	3	3	3	3	3	2	3	2	4	4	3	2	4	4	3	2	4	2
10	3	3	3	2	0	1	2	1	2	1	2	3	2	3	4	3	3	2	3	2	3	2	3	3	1	3	3	1	2	3
12	3	2	3	2	3	2	1	4	1	4	3	3	3	2	3	3	2	2	2	2	2	3	3	4	2	4	3	3	4	3
14	3	3	1	2	3	4	1	4	1	3	3	2	4	2	4	4	2	3	3	3	2	1	2	3	2	4	3	4	3	3
16	1	3	2	3	3	3	2	2	4	3	3	3	2	3	4	3	2	2	4	4	2	3	3	3	2	3	4	3	3	3
18	3	2	3	2	4	1	2	3	2	3	4	2	3	2	3	2	3	3	4	2	2	2	2	2	3	2	3	3	2	2
20	3	3	3	4	3	2	4	2	3	2	3	2	3	3	2	3	3	3	4	3	4	3	3	3	2	2	1	2	3	3
22	3	4	3	2	1	2	0	2	3	2	3	3	3	3	3	3	2	2	2	2	4	2	1	2	3	2	3	3	4	3
24	3	3	1	2	3	1	2	1	2	2	3	3	2	1	4	2	3	2	2	1	2	1	2	2	3	2	2	2	2	2
26	3	2	1	1	2	3	2	1	2	3	3	2	2	3	3	2	3	2	2	2	3	2	3	3	2	3	3	3	2	2
28	2	1	3	3	1	2	2	2	3	1	2	3	2	1	3	2	3	3	3	2	2	1	2	3	3	3	3	2	2	3
30	3	2	2	3	1	4	2	2	1	3	4	3	4	2	2	3	4	4	2	2	3	4	2	2	4	3	4	4	1	3
32	2	3	1	1	2	3	2	3	2	2	2	3	2	3	4	2	2	3	3	3	2	3	3	3	2	2	2	2	2	2
34	3	2	3	2	2	2	2	3	3	2	3	3	3	2	3	3	3	3	3	2	2	2	2	3	2	2	3	2	3	3
36	2	0	3	4	2	2	2	1	1	1	3	2	1	1	3	2	3	2	4	2	3	2	3	3	2	4	4	3	3	2
38	4	3	3	2	2	1	2	1	1	2	1	2	3	1	2	4	2	3	3	3	4	3	1	2	1	3	3	4	1	2
40	2	1	3	2	2	1	3	4	1	1	2	3	1	2	2	3	2	1	2	2	3	2	1	1	2	4	4	4	4	4
1	3	3	2	3	2	3	2	3	1	2	2	3	2	3	3	3	2	4	4	3	2	2	4	2	2	1	3	2	3	2
3	3	1	2	3	2	2	3	1	3	2	4	3	2	3	2	3	4	2	2	2	4	3	3	2	3	3	4	3	2	1
5	3	2	4	3	1	1	2	0	3	3	4	4	4	1	4	1	3	3	2	2	1	1	3	1	2	2	3	2	4	3
7	3	2	0	1	2	3	2	1	3	3	2	1	3	1	3	1	2	2	2	1	1	1	1	2	1	4	4	4	4	4
9	1	1	2	3	3	3	3	1	3	3	2	1	1	2	2	2	4	3	2	2	1	2	3	3	2	2	1	2	4	4
11	2	3	2	2	3	2	3	2	2	3	2	4	2	3	2	2	4	3	2	3	4	2	3	2	4	2	2	3	4	2
13	3	2	1	3	2	3	2	2	3	1	3	2	3	2	4	2	4	2	2	2	2	2	3	1	3	4	4	1	3	1
15	3	4	3	1	2	2	2	1	1	3	3	1	4	4	2	3	2	2	2	4	3	2	2	1	3	3	2	3	4	4
17	2	2	2	3	3	3	3	3	2	1	3	3	2	2	2	4	1	1	2	3	4	4	3	3	3	1	2	2	2	1
19	2	2	2	3	3	3	3	1	1	1	3	2	3	2	2	2	2	3	2	2	2	2	3	3	3	3	3	3	3	3

21	4	3	1	2	3	4	1	1	0	1	4	3	1	4	1	4	2	1	2	2	3	2	1	4	2	2	1	1	4	4
23	3	2	2	2	3	2	3	1	2	3	2	3	3	2	2	2	3	3	3	3	2	2	4	3	2	3	4	3	2	2
25	3	2	3	2	3	2	2	3	2	3	3	2	3	2	2	3	3	3	4	3	1	2	2	2	3	2	2	3	3	3
27	2	2	3	2	3	3	2	3	2	3	2	3	2	3	4	2	1	2	2	2	3	3	3	3	3	2	3	3	3	4
29	2	3	2	3	3	2	2	3	3	3	3	2	3	3	4	3	2	3	2	2	2	3	3	2	3	3	3	3	3	3
31	3	3	3	2	3	1	3	2	3	2	3	3	2	3	3	3	3	1	2	2	4	2	2	2	4	2	4	3	4	3
33	1	3	1	3	2	1	3	1	1	1	1	3	2	4	3	3	2	3	3	3	2	1	3	2	1	1	2	2	2	2
35	1	3	3	1	2	1	2	2	2	3	2	3	2	3	4	2	3	2	2	2	3	2	3	3	1	3	4	2	2	1
37	0	2	2	3	1	2	3	1	2	4	3	3	3	1	1	2	4	4	2	3	1	1	4	4	4	3	3	2	4	1
39	1	2	2	3	4	3	1	2	4	0	2	4	3	2	2	3	4	4	3	1	3	3	1	2	2	1	4	4	4	4